North Carolina Department of Transportation
Transportation Planning Branch

Comprehensive Transportation Plan

Study Report for the City of Locust and the Town of Stanfield

September 2004

Comprehensive Transportation Plan
Study Report
for the
City of Locust
and
Town of Stanfield

Prepared by the: Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: The City of Locust
The Town of Stanfield
The Federal Highway Administration
U.S. Department of Transportation

September, 2004

Acknowledgments

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Executive Summary

In January of 2002, the Transportation Planning Branch of the North Carolina Department of Transportation and the City of Locust made a formal agreement to begin an update of the 1985 City of Locust Thoroughfare Plan. The resulting City of Locust and Town of Stanfield Comprehensive Transportation Plan, as shown in **Figure 1**, resulted from the implementation of the transportation planning principles.

It is important to realize that the recommended transportation plan is based upon anticipated growth and development of the planning area reflecting current zonal trends as provided by the planning area. Prior to the construction of specific projects, a more detailed study will be required to reconsider development trends, determine specific design requirements, and further evaluate environmental impacts.

The Comprehensive Transportation Plan for Locust and Stanfield currently includes recommendations for three planning elements: the highway map, the public transportation and rail map, and the bicycle map. The format for the pedestrian map has not been finalized so it was not developed as part of this study. The highway element was determined by a hand allocation application of the traditional four-step planning process: trip generation, trip distribution, mode choice, and trip assignment. The public transportation and rail element and bicycle element were determined through discussions with the planners and was based on their overall goals for the area.

This report documents the findings of this study along with the resulting recommendations for improvements. In addition, this report presents transportation cross-section recommendations, cost estimates for the recommended improvements, and environmental features found in the recommended improvement area.

After constant coordination with the planning department and several informational meetings with the council members and citizens of the planning area, the Locust and Stanfield Comprehensive Transportation Plan was adopted by the Locust City Council at its meeting on May 6, 2004, and was adopted by the Town of Stanfield on May 6, 2004. The Strategic Highway Corridors concept is an initiative to protect the mobility function of critical highway facilities. NC 24-27 in the study area was designated as part of a strategic highway corridor from Charlotte to Fayetteville after the adoption of the Locust and Stanfield Comprehensive Transportation Plan. Therefore, the principles of strategic highway corridor planning were not considered in the plan recommendations and should be reviewed when implementing future transportation improvements along this corridor.

Implementation of the plan rests largely with the policy boards and citizens of the planning area. Transportation needs throughout the State exceed the available funding; therefore, local areas should aggressively pursue funding for the projects they desire.

Table of Contents

I. Introduction…….. 1

II. Recommendations……. 7
- Highway Element…… 7
- Public Transportation and Rail Element……..16
- Bicycle Element……...19

III. Population, Land Use, and Existing Transportation System……25
- Population…… 25
- Land Use……... 26
- Existing Transportation System…… 33

IV. Environmental Screening……...47
- Wetlands……...47
- Threatened and Endangered Species……47
- Historic Sties…… 48
- Archaeological Impacts……..48
- Educational Facilities……..49
- Demographics……..49

V. Public Involvement……..53

VI. Conclusion……55

Appendices

Appendix A: NCDOT Contacts
Appendix B: Definitions of Comprehensive Transportation Plan Categories
Appendix C: Comprehensive Transportation Plan Tabulations and Recommendations
Appendix D: Typical Comprehensive Transportation Plan Cross-Sections
Appendix E: Definitions of Environmental Status Codes

List of Figures

Figure

1 Comprehensive Transportation Plan……..……..iii
2 Geographic Location Map……. 3
3 1984 Locust Thoroughfare Plan…….…….. 5
4 Aberdeen Carolina and Western Rail Map……. 18
5 Locust Zoning Districts..……... 27
6 Stanfield Zoning Districts……..…….... 29
7 Stanfield Future Land Use Plan…… 31
8 Crash Location Map…….…….. 35
9 2002 AADT Map……..39
10 2030 AADT Map……..41
11 Structurally Deficient & Functionally Obsolete Bridges…….45
12 Environmental Features Map…… 51

List of Tables

Table

1 Population Growth…….…….. 25
2 Crash Locations.…….…… 35
3 Structurally Deficient & Functionally Obsolete Bridges…….45
4 Threatened & Endangered Species……48
5 Archaeological Sites……...49

I. Introduction

An area's transportation system is its lifeline, contributing to its economic prosperity and social well being. The importance of a safe and efficient transportation infrastructure cannot be overstressed. This system provides a means of transporting people and goods from one place to another quickly, conveniently, and safely. A well-planned system will meet the existing travel demands, as well as keep pace with the growth of the region. The City of Locust and the Town of Stanfield recognized the importance of this process of planning for future transportation needs and requested transportation planning assistance from the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) in September, 2000.

The City of Locust and the Town of Stanfield (known throughout the document as the planning area) are located in the southwestern part of Stanly County and border Cabarrus County. The planning area is approximately twenty-five miles east of Charlotte and approximately fifteen miles southwest of Albermarle. The geographical location of the planning area is shown in **Figure 2**.

This report documents the development of the 2004 Locust and Stanfield Comprehensive Transportation Plan shown in **Figure 1**, which replaces the 1985 Locust Thoroughfare Plan shown in **Figure 3**. In addition, this report presents recommendations for each mode of transportation. A separate report documents the technical analysis completed for this study and is available upon request to the Transportation Planning Branch. A comprehensive transportation plan is developed to ensure that the transportation system will be progressively developed to meet the needs of the planning area. It will serve as an official guide to providing a well-coordinated, efficient, and economical transportation system that utilizes all modes of transportation. This document will be used by local officials to ensure that planned transportation facilities reflect the needs of the public, while minimizing the disruption to local residents, businesses, and the environment.

The purpose of this study is to examine present and future transportation needs of the planning area and to develop a revised Comprehensive Transportation Plan to meet these needs. The plan recommends those improvements that are necessary to provide an efficient transportation system within the 2004-2030 planning period. The recommended cross-sections outlined in **Appendix D** for these improvements are based on existing conditions and projected traffic volumes.

Initiative for implementing the Transportation Plan rests predominately with the policy boards and citizens of the planning area. The responsibility for proposed construction is shared by the City of Locust, the Town of Stanfield, and the North Carolina Department of Transportation. As transportation needs throughout the

state exceed available funding, it is imperative that the local planning areas aggressively pursue funding for desired projects.

The proposed Comprehensive Transportation Plan is based on the projected growth for the planning area as coordinated with city and town planners. It is possible that actual growth patterns will differ from those logically anticipated. As a result, it may be necessary to accelerate or delay the development of some recommendations found on the plan. Some portions of the plan may require revisions in order to accommodate unexpected changes in urban development. Therefore, any changes made to one element of the Comprehensive Transportation Plan should be consistent with the other elements.

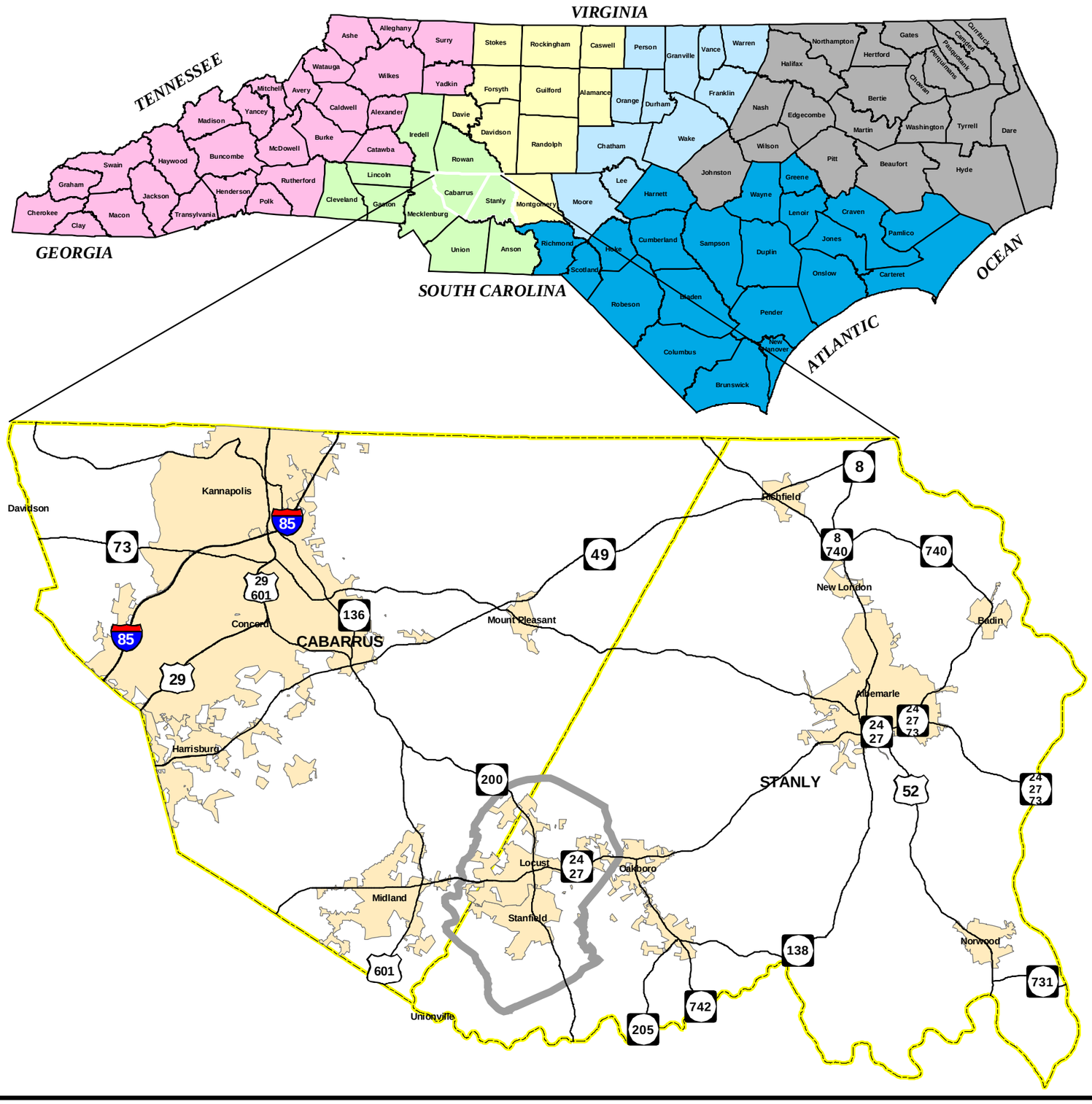


FIGURE 2

GEOGRAPHIC LOCATION MAP

N
W E
S

LEGEND

- ROADS
- MUNICIPAL BOUNDARY
- PLANNING BOUNDARY
- COUNTY BOUNDARY

PLANNING REGIONS

- METROLINA
- MOUNTAINS
- NORTHEAST
- SOUTHEAST
- TRIAD
- TRIANGLE

CITY OF

LOCUST

AND

TOWN OF

STANFIELD

STANLY COUNTY
NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING BRANCH

IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

BASE MAP DATE: January 2003

LOCUST THOROUGHFARE PLAN
JAN. 28, 1985

LEGEND
CITY LIMITS
MAJOR THOROUGHFARES
MINOR THOROUGHFARES
PROPOSED THOROUGHFARES

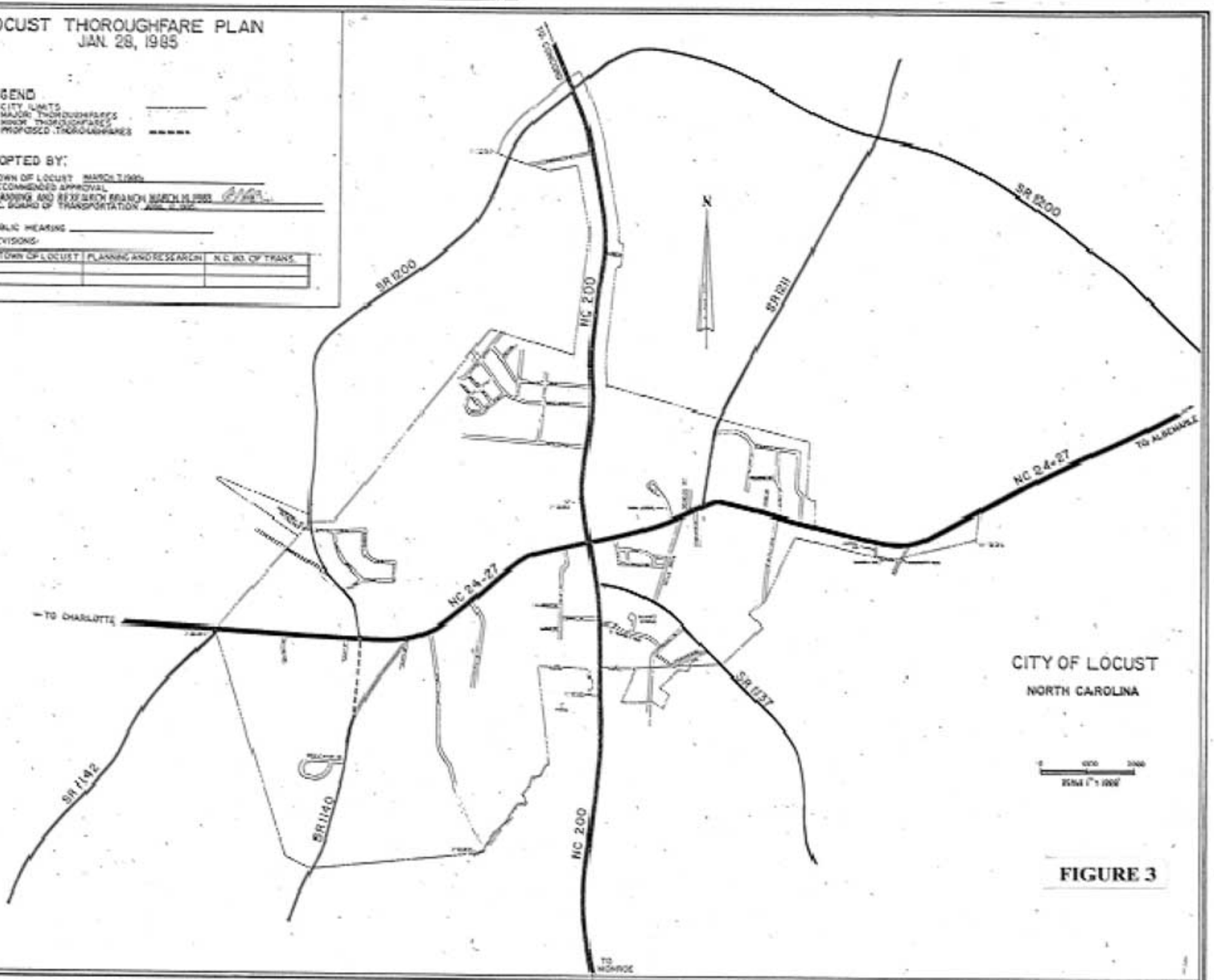
ADOPTED BY:

TOWN OF LOCUST MARCH 7 1985
RECOMMENDED APPROVAL
PLANNING AND RESEARCH BRANCH MARCH 14 1985
N.C. BOARD OF TRANSPORTATION APR. 4 1985

PUBLIC HEARING

REVISIONS:

TOWN OF LOCUST	PLANNING AND RESEARCH	N.C. BD. OF TRANS.



CITY OF LOCUST
NORTH CAROLINA

FIGURE 3

II. Recommendation

This chapter contains recommended improvements based on the ability of the existing transportation system to serve existing and anticipated travel desires as the area continues to grow. The plan represents a system of transportation elements including highways, public transportation and rail, bicycle, and pedestrian which will serve the anticipated traffic and land development needs for the planning area. The primary objective of this plan is to reduce traffic congestion and improve safety by eliminating both existing and projected deficiencies in the transportation system.

Highway Map

The recommended highway plan for the planning area is presented in **Sheet 2 of Figure 1.** This plan includes roadways within the planning area that fall into five categories: freeways, expressways, boulevards, other major thoroughfares, and minor thoroughfares. See **Appendix B** for a more detailed description of each category and **Appendix C** for an inventory of the highway recommendations.

The process of determining and evaluating recommendations for those roads in the comprehensive transportation plan involves many considerations including the goals and objectives of the public in the area, existing roadway properties, identified roadway deficiencies, environmental impacts and existing and anticipated land development. Consideration of these factors leads to the cooperative development of several recommended improvements. The problem statements for each recommendation are given below.

NC 200

- **Summary of Need**
  NC 200 is a boulevard on the Comprehensive Transportation Plan. There is a need to improve NC 200 to provide access to the planning area and relieve growing congestion.
- **Summary of Purpose**
  The primary purpose of this recommendation is to improve NC 200 to provide relief from future congestion, to provide a safer and more efficient roadway, and to provide an improved entrance into Locust and Stanfield from the south.
- **Roadway Conditions**
  Existing Characteristics
  NC 200 runs south to north throughout the planning area. NC 200 serves north-south travel through this area. The speed limit varies from 35 mph to 55 mph. The roadway is a two-lane undivided cross-section.

Existing Conditions
2002 average daily traffic ranged from 2,000 vehicles per day (vpd) south of Stanfield to 6,200 vpd in Locust. The practical capacity of the existing roadway is approximately 11,100 vpd.

Projected Conditions
Growth in the area is expected to increase through the year 2030, resulting in increased travel within and through the area. By the year 2030, traffic along NC 200 is projected to range from 9,000 vpd to 13,800 vpd, which will exceed current capacity in some locations.

- **Safety Analysis**
  The latest safety data was collected during the period from January 1, 1998 to December 1, 2001. During this period, there were 13 crashes on the section of NC 200 through the planning area.
- **System Linkages**
  Existing Road Networks
  With the widening of NC 24-27, there will be a greater demand for a southern entrance into the city of Locust and the town of Stanfield. The widening of NC 200 acts as a southern entrance into the city of Locust and the town of Stanfield, while it provides connectivity between Monroe and Concord and all of the roads in the area.
- **Social, Economic, and Environmental Conditions**
  Demographics
  Based on 2000 US Census data, the minority population along most of NC 200 is similar to the county average.

  Economic Data
  Future economic growth along this roadway will be predominately industrial and commercial developments, resulting in residential growth.

  Environmental
  Several wetlands found on the National Wetland Inventory will be impacted by the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for the proposed improvements is based on widening the existing facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, right-of-way (ROW) costs, and utility relocation costs. The cost estimate for this recommended facility is $23,024,000.

Reed Mine Trail Extension

- **Summary of Need**
  Reed Mine Trail is a minor thoroughfare on the Comprehensive Transportation Plan. There is a need to improve Reed Mine Trail to provide access to the planning area and relieve growing congestion on parallel roads. It is a proposed roadway on new location intended to connect NC 24-27 to Meadow Creek Church Road (SR 1200).
- **Summary of Purpose**
  The primary purpose of this recommendation is to improve Reed Mine Trail to provide relief from future congestion and to provide a safer and more efficient roadway while connecting Meadow Creek Church Road to NC 24-27 and the proposed new location of Browns Hill Road (SR 1142).
- **Roadway Conditions**
  Projected Conditions
  Growth in the area is expected to increase through the year 2030, resulting in increased residential developments through the area. By the year 2030, traffic along the Reed Mine Trail Extension is projected to be 4,300 vpd.
- **Safety Analysis**
  Crashes will be minimized at NC 24-27 with this extension by aligning this new facility with the proposed new location of Browns Hill Road (SR 1142).
- **System Linkages**
  Existing Road Networks
  The proposed facility will provide an alternate route around Locust for traffic on NC 24-27 and NC 200.
- **Social, Economic, and Environmental Conditions**
  Demographics
  Based on 2000 US Census data, the minority population is similar to the county average and in one area two times the county average.

  Economic Data
  Future economic growth in the area will result in residential growth. In addition, a golf course is currently being planned for construction along Reed Mine Trail.

  Environmental
  Several wetlands found on the National Wetland Inventory will be impacted by the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for the proposed improvements is based on widening the existing facility to NCDOT standards, widening the existing bridges, extending the road, mitigating for possible wetland impacts, ROW costs, and utility

relocation costs. The cost estimate for this recommended facility is $3,220,000.

Browns Hill Road (SR 1142)

- **Summary of Need**
  Browns Hill Road is a minor thoroughfare on the Comprehensive Transportation Plan. There is a need to improve Browns Hill Road to provide greater sight distance in the western direction, while improving safety for motorists.
- **Summary of Purpose**
  The primary purpose of this recommendation is to improve Browns Hill Road to current roadway standards and to provide a safer and more efficient roadway for truck traffic.
- **Roadway Conditions**
  Existing Characteristics
  Browns Hill Road runs south to north throughout the planning area. It serves as an entrance to the industrial park and a route for residences. The speed limit varies from 35 mph to 55 mph. The roadway is a narrow, two-lane, undivided cross-section.

  Existing Conditions
  2002 average daily traffic is 700 vpd. The practical capacity of the existing roadway is approximately 12,000 vpd.

  Projected Conditions
  Growth in the area is expected to increase through the year 2030, resulting in increased travel within and through the area. By the year 2030, traffic along Browns Hill Road is projected to be 1,300 vpd.
- **Safety Analysis**
  The latest safety data was collected during the period January 1, 1998 to December 1, 2001. During this period, there were no reported crashes. However, the sight distance should be improved to minimize any future crashes.
- **System Linkages**
  Existing Road Networks
  The proposed improvements will provide a needed north-south link to the existing roadway network for the area and improved sight distance in the western direction. The improvements would enable trucks to enter and exit the industrial park without traveling on other local roads. This road should link to the proposed Reed Mine Trail extension.
- **Social, Economic, and Environmental Conditions**
  Demographics
  Based on 2000 US Census data, the minority population is similar to the county average.

Economic Data
Future economic growth along this roadway will be predominately industrial development. These improvements will promote economic development in the industrial park.

Environmental
Based on an environmental screening in the planning area, there are no known impacts to wetlands, threatened and endangered species, historic sites, archeological sites or educational facilities. For more information on the environmental screening see chapter 4.

- **Cost Estimates**
  The cost estimate for the proposed improvements is based on widening the existing roadway facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, ROW costs, and utility relocation costs. The cost estimate for this recommended facility is $4,099,000.

Scout Road Extension (SR 1201)

- **Summary of Need**
  Scout Road is a minor thoroughfare on the Comprehensive Transportation Plan. There is a need to improve Scout Road to provide access to Meadow Creek Church Road (SR 1200) to the proposed Reed Mine Trail.
- **Summary of Purpose**
  The primary purpose of this recommendation is to improve Scout Road to current roadway standards and to provide a connection from Meadow Creek Church Road (SR 1200) and to the proposed Reed Mine Trail extension, while providing a safer and more efficient roadway.
- **Roadway Conditions**
  Projected Conditions
  Growth in the area is expected to increase through the year 2030, resulting in increased housing developments through the area. There are several proposed businesses and residential developments that are focused on building in the Reed Mine Trail and Scout Road area.
- **Safety Analysis**
  The latest safety data was collected during the period January 1, 1998 to December 1, 2001. During this period, there were no reported crashes.
- **System Linkages**
  Existing Road Networks
  The proposed facility would allow traffic to travel from Meadow Creek Church Road (SR 1200) to the proposed Reed Mine Trail extension.
- **Social, Economic, and Environmental Conditions**
  Demographics
  Based on 2000 US Census data, the minority population in most of Scout Road is about two times to three times the county average.

Economic Data
Future economic growth in the area will result in residential growth. In addition, a golf course is currently being planned for construction along Reed Mine Trail.

Environmental
Based on an environmental screening in the planning area, there are no known impacts to wetlands, threatened and endangered species, historic sites, archeological sites or educational facilities. For more information on the environmental screening see chapter 4.

- **Cost Estimates**
  The cost estimate for the proposed improvements is based on extending the roadway, widening the existing facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, ROW costs, and utility relocation costs. The cost estimate for this recommended facility is $614,000.

Sunset Lake Road Extension (SR 1126)

- **Summary of Need**
  Sunset Lake Road is a minor thoroughfare on the Comprehensive Transportation Plan. There is a need to improve Sunset Lake Road to provide access to the planning area and relieve growing congestion on other roadways.
- **Summary of Purpose**
  The primary purpose of this recommendation is to provide an alternative route from Sunset Lake Road (SR 1126) to Harvell Road (SR 1125) eliminating the need to use NC 200 and to improve this road to current roadway standards.
- **Roadway Conditions**
  Existing Conditions
  2002 average daily traffic is 700 vpd. The practical capacity of the existing roadway is approximately 12,000 vpd.

  Projected Conditions
  Growth in the area is expected to increase through the year 2030, resulting in increased housing developments through the area. By the year 2030, traffic along Sunset Lake Road is projected to be 800 vpd.
- **Safety Analysis**
  The latest safety data was collected during the period January 1, 1998 to December 1, 2001. During this period, there were no reported crashes.
- **System Linkages**
  Existing Road Networks
  The proposed facility would allow traffic to travel from NC 200 to Harvell Road (SR 1125).

- **Social, Economic, and Environmental Conditions**

  Demographics

  Based on 2000 US Census data, the minority population is similar to the county average.

  Economic Data

  Future economic growth in the area will result in residential growth.

  Environmental

  Several wetlands found on the National Wetland Inventory will be impacted by the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.

- **Cost Estimates**

  The cost estimate for the proposed improvements is based on extending the roadway, widening the existing facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, ROW, and utility relocation costs. The cost estimate for this recommended facility is $1,926,000.

Oak Grove Road (SR 1115)

- **Summary of Need**

  Oak Grove Road is a minor thoroughfare on the Comprehensive Transportation Plan. There is a need to improve Oak Grove Road to provide access to other roadways in the area.

- **Summary of Purpose**

  The primary purpose of this recommendation is to improve Oak Grove Road to provide a connection from NC 200 to Love Mill Road (SR 1001) enabling traffic to utilize Oak Grove Road as an east-west bypass and to improve Oak Grove Road to current roadway standards.

- **Roadway Conditions**

  Existing Characteristics

  Oak Grove Road runs from east to west in the planning area with a speed limit of 55 mph. The roadway is a two-lane, undivided, cross-section.

  Existing Conditions

  2002 average daily traffic is 700 vpd. The practical capacity of the existing roadway is approximately 12,500 vpd.

  Projected Conditions

  Growth in the area is expected to increase through the year 2030, resulting in increased housing developments through the area. By the year 2030, traffic along Oak Grove Road is projected to be 1,300 vpd.

- **Safety Analysis**
  The latest safety data was collected during the period January 1, 1998 to December 1, 2001. During this period, there were no reported crashes.
- **System Linkages**
  Existing Road Networks
  With the extension of Oak Grove Road, there will be a greater demand to travel from NC 200 to Love Mill Road (SR 1001), which are two of the main roadways into Stanfield.
- **Social, Economic, and Environmental Conditions**
  Demographics
  Based on 2000 US Census data, the minority population is similar to the county average.

  Economic Data
  Future economic growth in the area will result in residential growth.

  Environmental
  Several wetlands found on the National Wetland Inventory will be impacted by the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for the proposed improvements is based on extending the roadway, widening the existing facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, ROW costs, and utility relocation costs. The cost estimate for this recommended facility is $5,355,000.

Other Recommendations

Widening Projects

The following facilities are recommended to be widened to improve safety and capacity. Each of the sections of roadway listed currently have lane widths less than 12 feet, and are recommended to be widened to 12-foot lanes. Prior to any roadway improvements, the NCDOT Division of Bicycle and Pedestrian Transportation should be consulted on the most appropriate cross-section.

- **Coley Store Road (SR 1211),** from NC 24-27 to south of Oscar Road (SR 1275)
- **Elm Street (SR 1137),** from NC 200 to Big Lick Road
- **Loves Mill Road (SR 1001),** from south of Talley Road (SR 1149) to NC 200
- **Bethel Church Road (SR 1200),** from NC 200 to NC 24-27
- **Meadow Creek Church Road (SR 1200),** from NC 200 to NC 24-27
- **West Stanly Street (SR 1144),** from Renee Ford Road (SR 1140) to NC 200
- **Big Lick Road (SR),** from NC 200 to Island Creek
- **Renee Ford Road (SR 1140),** from NC 24-27 to south of Polk Ford Road (SR 1147)
- **Nance Road (SR 1143),** from Pine Bluff Road (SR 1146) to Renee Ford Rd (SR 1140)
- **River Road (SR 1145),** from US 601 to Loves Chapel Road (SR 1001)
- **Pine Bluff Road (SR 1146),** NC 24-27 to River Road (SR 1145)

Sight Distance Recommendations

Improvements are recommended at the following intersections to provide better sight distance.

- Loves Chapel Road (SR 1001) and NC 200
- Coley Store Road (SR 1211) and Bethel Church Road (SR 1200)
- Browns Hill Road (SR 1142) and NC 24-27
- Harvell Road (SR 1125) and NC 200
- Charlotte Street and NC 200

Local Recommendations

The following improvements are recommended for local roads to improve traffic flow and provide connectivity to other local roads.

- **Deerwood Drive** extension from Deerwood Drive to Sunset Lake Road
- **Montclair Drive** extension from Montclair Drive to Market Street
- **Lions Club Road** extension to Park Drive
- **Park Drive** extension to Lions Club Drive
- **New location** from Coley Store Road (SR 1211) to Park Drive
- **Park Avenue** extension from Park Avenue to Vella Drive
- **Columbus Street** extension from Columbus Street to Vella Drive

Public Transportation and Rail Map

The Public Transportation and Rail Element of the transportation plan is an innovative way to consider other modes of transportation and give the public other options of traveling from one place to another. Today, the emphasis is on obtaining a balance between a walking society and a riding society. The public transportation and rail plan for the planning area is presented on **Sheet 3 of Figure 1**. See **Appendix B** for a more detailed description of each category and **Appendix C** for the public transportation and rail inventory.

Public Transportation Recommendations

Public transportation is evident throughout Stanly County. There are several public transportation services within the county including vanpool and general public service. Within the planning area, transportation services for the elderly are offered to Locust and Stanfield by the Senior Services Monday through Wednesday. General public passengers are encouraged to ride on these days as well. Early morning and late afternoon trips are also available daily to these areas. Public trips, Medicaid trips, and trips through the Elderly and Disabled Transportation Assistance Program (EDTAP) are provided to people traveling between the planning area and Albemarle. Any future public transportation endeavors should be coordinated with the Locust and Stanfield planners, Oakboro, Red Cross, and the Stanly County Transit Director. Vanpools should be coordinated between the planning area and the Charlotte Area Transit System (CATS).

The process of determining and evaluating recommendations for the public transportation element of the transportation plan involves many considerations including the goals and objectives of the area, existing properties, environmental impacts, and existing and anticipated land development. Consideration of these factors led to the cooperative development of several recommended improvements. The purpose and need for each recommendation is given below.

Park and Ride Lot

- **Summary of Need**
  A park and ride lot will relieve the growing congestion along the existing routes in Locust and Stanfield. The proposed location of the park and ride lot is on the northern side of NC 24-27 between Browns Hill Road (SR 1142) and Meadow Creek Church Road (SR 1200).
- **Summary of Purpose**
  The primary purpose of this recommendation is to promote carpools, vanpools, bicycling, and walking within this area that provides relief from future congestion on NC 24-27.
- **Roadway Conditions**
  Projected Conditions
  Based on the 2000 census, there were about 3,500 people commuting from Stanly County to Cabarrus County and about 3,000 people

commuting from Stanly County to Mecklenburg County. Growth in the area is expected to increase through the year 2030, resulting in increased travel between the planning area and neighboring cities. This facility will allow people to bicycle or walk to the park and ride lot from their homes to commute to work by way of a carpool, decreasing the vehicular traffic on Meadow Creek Church Road.

- **System Linkages**
  This park and ride lot will connect riders/drivers with common commuter patterns between the planning area and Albemarle and Charlotte.
- **Social, Economic, and Environmental Conditions**

  Demographics
  Based on 2000 US Census data, the minority population around the park and ride lot is similar to the county average.

  Economic Data
  Future economic growth in the area will result in residential growth. In addition, a golf course is currently being planned for construction along Reed Mine Trail and a hospital is currently being planned for construction along NC 24-27.

  Environmental
  There is one wetland found on the National Wetland Inventory in the vicinity of the proposed park and ride lot. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for the proposed improvements is based on landscaping, lighting, extending the roadway, widening the existing facility to NCDOT standards, widening the existing bridges, mitigating for possible wetland impacts, ROW costs, and utility relocation costs. The cost estimate for this recommended facility is $150,000.

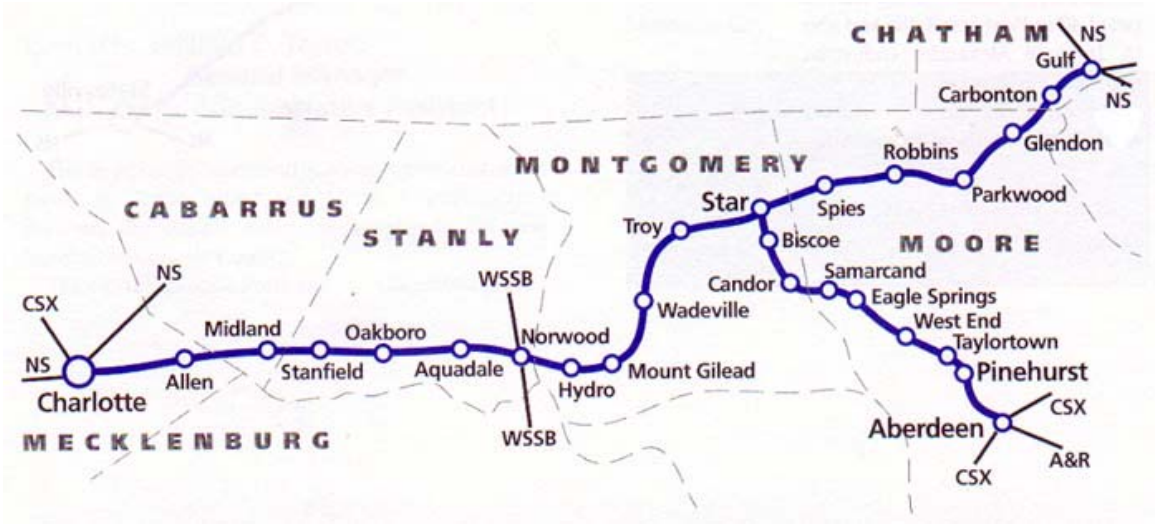
Rail Recommendations

Railroads were the backbone of the transportation system in the United States in the early 1800s. In the 1920s, society moved toward the automobile as their primary source of transportation. Today, there is more of an interest in utilizing the railroad as an alternative mode of transportation for commuting to work and to facilitate the movement of freight.

The planning area currently has an active rail freight corridor. The Aberdeen Carolina and Western Railroad (ACWR) owns 160 miles of track running from Charlotte (Mecklenburg County) through Midland (Cabarrus County) and Stanfield (Stanly County) to Star (Montgomery County) and continuing northwest and southwest from Star as seen in **Figure 4**. Banks Lumber in Stanfield uses

this railroad to transport lumber to various locations. A rail inventory can be found in **Appendix C**.

Figure 4



Map from the Aberdeen Carolina and Western Railroad web site

The NCDOT Rail Division completed a study documenting potential NC Commuter Rail Corridors in January 1999. This study included a corridor from Charlotte to Albemarle that would have passed by Stanfield. This corridor was eliminated for further consideration once discussions began about providing improved passenger service from Charlotte to Raleigh. According to CATS planners, the ACWR line was studied, but determined to not have enough commuter ridership within the Charlotte area prior to the year 2025.

Bicycle Map

The NCDOT envisions that all citizens of North Carolina and visitors to the state should be able to walk and bicycle safely and conveniently to their chosen destinations with reasonable access to roadways. Information on events, funding, maps, policies, projects, and processes dealing with these modes of transportation is available by contacting the NCDOT Division of Bicycle and Pedestrian Transportation.

The recommended bicycle element on the Comprehensive Transportation Plan for the planning area is presented in **Sheet 4 of Figure 1.** This plan includes on-road and off-road facilities. See **Appendix B** for a more detailed description of each of these two categories and **Appendix C** for the bicycle facilities inventory.

The process of determining and evaluating recommendations for the bicycle element of the comprehensive transportation plan involves many considerations including the goals and objectives of the area, existing properties, environmental impacts, and existing and anticipated land development. The latest safety data collected during the years from 1997 to 2001 showed that there were a total of 30 bicycle crashes in Stanly County. Twenty-one of these crashes occurred in an urban area and nine crashes occurred in a rural area. Consideration of these factors led to the cooperative development of several recommended improvements. The purpose and need for each recommendation is given below.

Meadow Creek Church/ Bethel Church Road (SR 1200)

- **Summary of Need**
  Meadow Creek Church/Bethel Church Road is an on-road bicycle facility and a minor thoroughfare roadway in the Comprehensive Transportation Plan. In order to facilitate use by both automobiles and bicycles, the roadway cross-section should include a wide shoulder.
- **Summary of Purpose**
  The primary purpose of this recommendation is to provide a safer facility for cyclists in conjunction with the proposed highway improvements for Meadow Creek Church/Bethel Church Road (SR 1200).
- **System Linkages**
  Existing Bicycle Networks
  Meadow Creek Church/Bethel Church Road is a designated bicycle route on the Stanly County Bicycle Map. The route connects Locust with Mission and connects two other designated bicycle facilities in Stanly County.
- **Social, Economic, and Environmental Conditions Networks**
  Demographics
  Based on 2000 US Census data, the minority population along Meadow Creek Church/Bethel Church Road is similar to the county average.

Economic
Future economic growth in the area will result in residential growth. In addition, a school is currently being planned near the intersection of NC 200 and Meadow Creek Church Road.

Environmental
There is one wetland found on the National Wetland Inventory in the vicinity of the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.

- **Cost Estimates**
  The cost estimate for this recommendation is based on widening the existing roadway to NCDOT standards, adding an additional four foot shoulder for bicyclists, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $11,086,000.

Renee Ford Road (SR 1140)

- **Summary of Need**
  Renee Ford Road is an on-road bicycle facility and a minor thoroughfare roadway in the Comprehensive Transportation Plan. In order to facilitate use by both automobiles and bicycles, the roadway cross-section should include a wide shoulder.
- **Summary of Purpose**
  The primary purpose of this recommendation is to provide a safer facility for cyclists in conjunction with the proposed highway improvements for Renee Ford Road (SR 1140).
- **System Linkages**
  Existing Bicycle Networks
  Renee Ford Road is a designated bicycle route on the Stanly County Bicycle Map. This route connects Locust to Stanfield and connects two other designated bicycle facilities.
- **Social, Economic, and Environmental Conditions Networks**
  Demographics
  Based on 2000 US Census data, the minority population is similar to the county average and is three times the county average around Nance Road.

  Economic
  Future economic growth in the area will result in residential growth.

  Environmental
  There is one wetland found on the National Wetland Inventory in the vicinity of the proposed improvements. There are no other known environmental impacts to threaten and endangered species, historic sites,

archeological sites or educational facilities in the vicinity of the proposed improvements.

- **Cost Estimates**
  The cost estimate for this recommendation is based on widening the existing roadway to NCDOT standards, adding an additional four foot shoulder for bicyclists, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $5,327,000.

West Stanly Street (SR 1144) and Big Lick Road (SR 1130)

- **Summary of Need**
  West Stanly Street and Big Lick Road is an on-road bicycle facility and a minor thoroughfare roadway on the Comprehensive Transportation Plan. In order to facilitate use by both automobiles and bicycles, the roadway cross-section should include a wide shoulder.
- **Summary of Purpose**
  The primary purpose of this recommendation is to provide a safer facility for cyclists in conjunction with the proposed highway improvements for West Stanly Street (SR 1144) and Big Lick Road (SR 1130).
- **System Linkages**
  Existing Bicycle Networks
  This is a designated bicycle route on the Stanly County Bicycle Map. The route connects Stanfield to Oakboro and connects other designated bicycle facilities.
- **Social, Economic, and Environmental Conditions Networks**
  Demographics
  Based on 2000 U.S. Census data, the minority population around this facility varies from the county average to two times the county average.

  Economic
  Future economic growth in the area will result in residential growth.

  Environmental
  There are several wetlands found on the National Wetland Inventory that will be impacted by the proposed improvements. There are no other known environmental impacts in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for this recommendation is based on widening the existing roadway to NCDOT standards, adding an additional four foot shoulder for bicyclists, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $4,099,000.

Easement Facility

- **Summary of Need**
  The easement facility will connect neighborhoods and will allow non-highway users to travel from one location to another location.
- **Summary of Purpose**
  The primary purpose of this recommendation is to allow cyclists to travel off of the roadways and provide access to several roadways including Pineridge Street, NC 24-27, Meadow Creek Church Road (SR 1200), and Smith Street.
- **System Linkages**
  Existing Bicycle Networks
  This off-road facility will connect to the existing Meadow Creek Church Road (SR 1200) bicycle facility.
- **Social, Economic, and Environmental Conditions Networks**
  Demographics
  Based on 2000 U.S. Census data, the minority population is similar to the county average.

  Economic
  Future economic growth in the area will result in residential growth.

  Environmental
  There are several wetlands found on the National Wetland Inventory in the vicinity of the proposed off-road facility. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for this recommendation is based on a multi-use path, bridges, ROW costs, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $600,000.

Park and Ride Path

- **Summary of Need**
  An off-road bicycle facility between the proposed park and ride lot and Meadow Creek Church Road (SR 1200) will provide an alternate means of accessing the park and ride facility, relieving congestion along the existing routes in Locust and Stanfield.
- **Summary of Purpose**
  The primary purpose of this recommendation is to promote carpools, vanpools, bicycling, and walking within this area that provides relief from future congestion on NC 24-27.
- **System Linkages**
  This facility will connect Meadow Creek Church Road (SR 1200) to the park and ride lot. This off-road facility will connect to other proposed off-road bicycle facilities.

- **Social, Economic, and Environmental Conditions Networks**

  Demographics

  Based on 2000 US Census data, the minority population around the park and ride path is similar to the county average.

  Economic Data

  Future economic growth in the area will result in residential growth. In addition, a golf course is currently being planned for construction along Reed Mine Trail extension and a hospital is currently being planned along NC 24-27.

  Environmental

  There is one wetland found on the National Wetland Inventory in the vicinity of the proposed facility. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**

  The cost estimate for this recommendation is based on multi-use path, bridges, ROW costs, and mitigating for possible environmental impacts to wetlands. The cost estimate for this recommended facility is $181,000.

<u>Simpson Road Facility</u>

- **Summary of Need**

  The Simpson Road facility will connect neighborhoods and will allow non-highway users to travel from one location to another location while traveling from Locust to Stanfield.
- **Summary of Purpose**

  The primary purpose of this recommendation is to provide cyclists another entrance into Stanfield from Locust while connecting Church Street, Simpson Road, and Willow Creek Road.
- **System Linkages**

  Existing Bicycle Networks

  This off-road facility will connect to other proposed off-road bicycle facilities.
- **Social, Economic, and Environmental Conditions Networks**

  Demographics

  Based on 2000 US Census data, the minority population is similar to the county average.

  Economic

  Future economic growth in the area will result in residential growth.

  Environmental

  There is one wetland found on the National Wetland Inventory in the vicinity of the proposed facility. There are no other known environmental

impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.

- **Cost Estimates**
  The cost estimate for this recommendation is based on constructing a multi-use path, bridges, ROW costs, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $396,000.

Rock Hole Creek Path

- **Summary of Need**
  Rock Hole Creek Path is an off-road bicycle facility that will allow non-highway users to travel from one location to another location while giving them access to the elementary school and the public park. It will allow cyclists to travel to Loves Chapel Road (SR 1001), East Prong Rock Hole Creek, Polk Ford Road (SR 1147) and Polk Ford Road (SR 1147) safely.
- **Summary of Purpose**
  The primary purpose of this recommendation is to provide a safer facility for cyclists to travel to public areas without using the roadway.
- **System Linkages**
  Existing Bicycle Networks
  Rock Hole Creek Path will be a link to the designated pedestrian walkway located on Loves Chapel Road (SR 1001). This facility will also connect residential areas to the elementary school and the public park. There should be coordination with Stanfield Elementary School and a representative of the public park when determining the best location for the path.
- **Social, Economic, and Environmental Conditions Networks**
  Demographics
  Based on 2000 US Census data, the minority population around this facility varies from the county average to two times the county average.

  Economic
  Future economic growth in the area will result in residential growth.

  Environmental
  There are several wetlands found on the National Wetland Inventory and a public park in the vicinity of the proposed facility. There are no other known environmental impacts to threaten and endangered species, historic sites, archeological sites or educational facilities in the vicinity of the proposed improvements.
- **Cost Estimates**
  The cost estimate for this recommendation is based on constructing a multi-use path, bridges, ROW costs, and mitigating for possible impacts to wetlands. The cost estimate for this recommended facility is $19,589,000. This will vary depending on the exact location of the path. This cost includes several stream crossings, which could be avoided depending on the route.

III. Population, Land Use, and Traffic

In order to fulfill the objectives of an adequate long range transportation plan, reliable forecasts of future travel patterns must be achieved. Such forecasts depend on careful analysis of the following items: historic and potential population changes, significant economic trends, character and intensity of land development, and the ability of the existing transportation system to meet existing and future travel demand. Secondary items that influence forecasts include the effects of legal controls such as zoning ordinances and subdivision regulations, availability of public utilities and transportation facilities, and topographic and other physical features of the urban area.

Population

Since the volume of traffic on a roadway is related to the size and distribution of the population that it serves, population data is used to aid the development of the transportation plan. Future population estimates typically rely on the observance of past population trends and counts. While statistics show that the population within the planning area has been increasing at a steady rate, the City has suggested that the population will have a significant increase in the next ten to fifteen years. The Stanly County population will be growing at a slower rate than the planning area, but the southwestern part of the county should see an increase in population. According to the City, the population will triple in the next ten years if everything that is proposed is built. **Table 1** presents the population trends for Locust, Stanfield, Stanly County, Cabarrus County, and North Carolina.

Table 1 Population Growth

Location	1970	1980	1990	2000	2030
North Carolina	5,082,059	5,881,766	6,628,637	8,046,485	12,447,597
Cabarrus County	74,629	85,895	98,935	131,063	246,640
Stanly County	42,822	48,517	51,765	58,100	76,649
Locust	1,484	1,590	1,940	2,416	13,000
Stanfield	458	463	517	1,113	2,500

Population growth in an urban area is typically 1-3% annually. Historic trends for Locust yielded a 2% growth rate. After discussions with the area, an 8% growth rate was used for the first 20 years of the planning area and a 2% growth rate was used for the remaining years. Historic trends for Stanfield yielded a 6% growth rate that is unsustainable and a 2% growth rate was used instead of the original 6%. Based on these projected growth rates, it was determined that Locust will have a population of 13,000 and Stanfield will have a population of 2,500 in 2030.

Land Use

Land use refers to the physical patterns of activities and functions within an area. The transportation demand along a particular road or for multi-modal facilities is related to the land uses adjacent to that facility and the intensity of land use effects the traffic patterns for multi-modal facilities. For example, a shopping center generates larger traffic volumes than a residential area. The spatial distribution of varying land uses is the predominant determinant of when, where, and why congestion occurs. The attraction between different land uses and their association with travel varies with the size, type, intensity, and spatial separation of each land use. When dealing with transportation planning, land use is divided into the following classifications:

- Residential – All land is devoted to the housing of people, with the exception of hotels and motels.

- Commercial – All land is devoted to retail trade including consumer and business services and their offices; this may be further stratified into retail and special retail classifications. Special retail would include high-traffic establishments, such as fast-food restaurants and service stations; all other commercial establishments would be considered retail.

- Industrial – All land is devoted to the manufacturing, storage, warehousing, and transportation of products.

- Public – All land is devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.

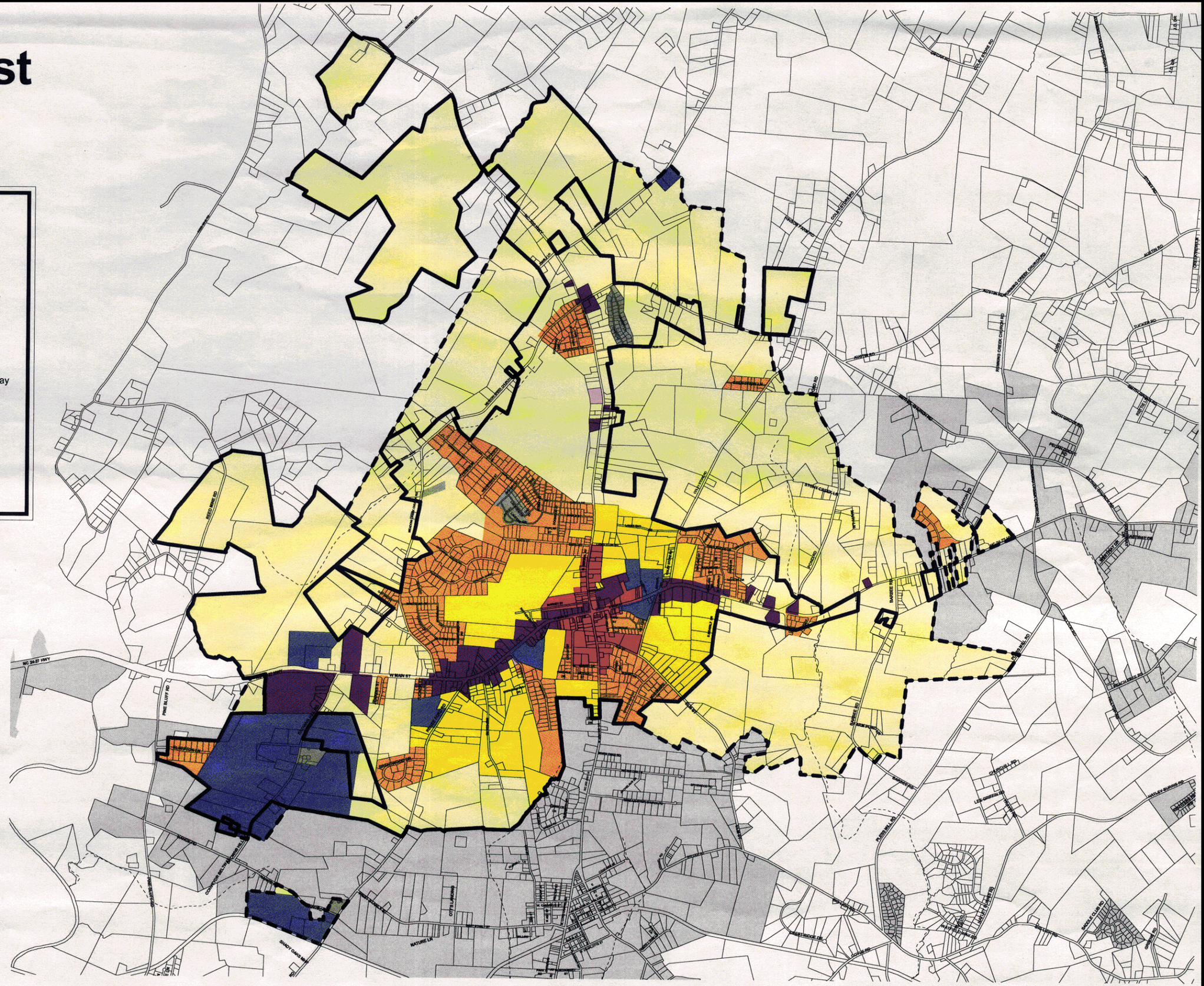
Figure 5 shows the existing zoning for the City of Locust and **Figure 6** shows the existing zoning for the Town of Stanfield. **Figure 7** shows the 1993 land use plan for the Town of Stanfield. The anticipated land use development for the planning area is predominantly residential, industrial, and commercial. Noticeable residential growth is expected in the planning area with the highest growth in the southern and northern portion of the planning area. The areas of highest employment growth are expected along the major roadway corridors throughout the planning area (NC 200, NC 24-27, and Browns Hill Road). Controlling development along the NC 200 corridor will help prepare the corridor for the planning area's vision of a boulevard. Promoting high-density, multi-land use in the planning area will in turn promote a multi-modal transportation system due to ease of access to the alternative modes of transportation.

City of Locust

Zoning Map

Zoning Districts

- OPS Open Space District
- NR Neighborhood Residential
- GR General Residential
- CC City Center
- LHC Light Highway Commercial
- HC Highway Commercial
- CBI Campus Business and Institutional
- MH Mobile Home District
- TND-O Traditional Neighborhood Development Overlay
- Locust Municipal Limits
- Locust ETJ Boundary
- Other Municipalities
- Parcels
- Streams



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Scale: 1 inch = 2800 feet

FIGURE 5

Prepared by Centralina Council of Governments, August 8, 2003.

FIGURE 6

Zoning Districts

Legend

- Zoning Districts
- C-B: Central Business
- CBI: Central Business Industrial
- G-B: General Business
- I: Industrial
- OPS: Open Space
- R-12: Residential
- R-20: Residential
- R-A: Residential - Agricultural
- Roads

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STANLY COUNTY GIS
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Town of Stanfield, NC

Generalized Future Land Use Map, 1993

FIGURE 7

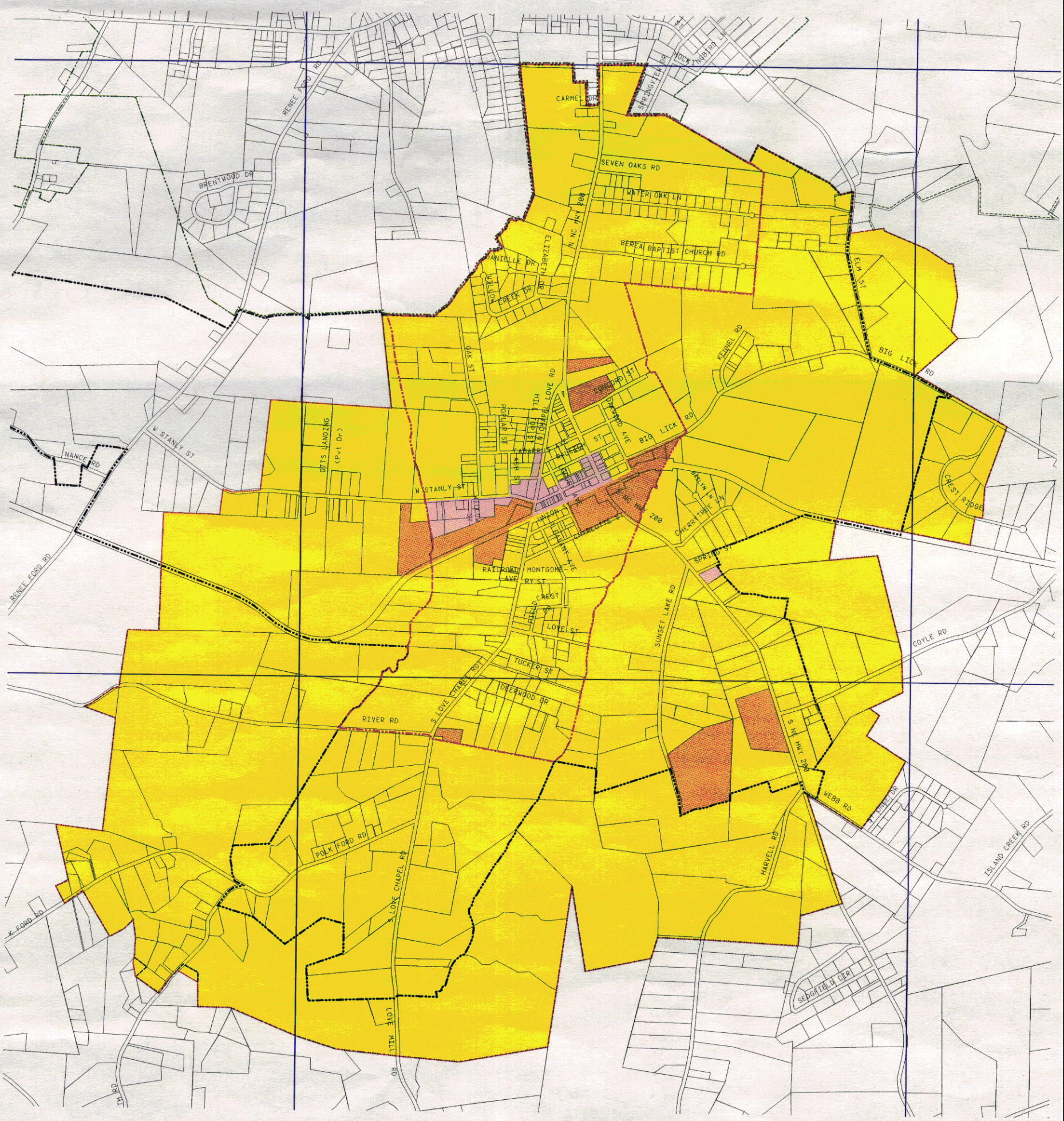
Future Land Use

- Residential
- Retail
- Industrial

- Street ROWs and Lot Boundaries
- 1993 Stanfield Corporate Limits
- 1993 ETJ Boundary
- 1999 Stanfield Corporate Limits
- 1999 ETJ Boundary

- Locust Town Limits
- Locust ETJ Boundary

- County Index Boundaries



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Existing Roadway System

An important stage in the development of a comprehensive transportation plan is the analysis of the existing roadway system and its ability to serve the area's travel desires. Emphasis is placed not only on detecting the existing deficiencies, but also on understanding the causes of these deficiencies. Travel deficiencies may be localized, resulting from problems with inadequate pavement width, intersection geometry, or intersection controls. Travel deficiencies may also result from system problems such as the need to construct missing travel links, bypass routes, loop facilities, or additional radial routes.

An analysis of the roadway system looks at both current and future travel patterns and identifies existing and anticipated deficiencies. This is usually accomplished through a traffic collision analysis, roadway capacity deficiency analysis, and a system deficiency analysis. This information is used to analyze factors that will impact the future system including population growth, economic development potential, and land use trends.

Traffic Crash Analysis

Traffic crashes are often used as an indicator for locating congestion problems. While often the result of drivers or vehicle performance, crashes may also be a result of the physical characteristics of the roadway. Roadway conditions and obstructions, traffic conditions, and weather may all lead to a crash. While some crashes are the fault of the driver, others may be prevented with physical design or traffic control changes such as the installation of stop signs or traffic signals.

Crash data for the period from January 1999 to December 2001 was studied as part of the development of the plan. The crash analysis considered both crash frequency and severity. Crash frequency is the total number of reported collisions while crash severity is the crash rate based upon injuries and property damage incurred. These two factors helped to determine the worst intersections within the planning area that are summarized in **Table 2** and shown in **Figure 8**.

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of the locations listed in **Table 2**, or other intersections of concern, the planning area should contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in **Appendix A**.

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FIGURE 8
CRASH LOCATIONS

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LEGEND

- STUDY AREA
- MUNICIPAL BOUNDARIES
- HIGH CRASH LOCATIONS

Table 2 Crash Locations			
Map Index	**Intersection**	**Average Severity**	**Total Collisions**
1	NC 24 at Meadow Creek Church Rd (SR 1200)		6
2	NC 24 at Renee Ford Rd (SR 1140)		16
3	Bell St at Main St		12
4	NC 24 at Bell St		4
5	NC 24 at Locust Ave		8
6	NC 24 at NC 200		15
7	NC 200 at Elm St (SR 1137)		4
8	Bethel Church Rd (SR 1200) at Coley Store Rd (SR 1211)	34	5
9	Running Creek Rd (SR 1134) at Bethel Church Rd (SR 1200)	77	1

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Roadway Capacity Deficiencies

Roadway capacity deficiencies occur wherever the travel demand volume of a roadway is close to or more than the capacity of that roadway. Travel demand volume is the total number of vehicles that wish to use a roadway on a daily basis. The existing travel demand volumes for the planning area are based upon traffic count data taken annually by the NCDOT Traffic Survey Unit and are shown in **Figure 9** for the year 2002. The projected 2030 travel demand volumes, which are based upon historic and anticipated population, economic growth patterns, and land use trends, are shown in **Figure 10**.

Capacity is the maximum number of vehicles that can pass over a given section of roadway during a given time period under prevailing roadway and traffic conditions while still maintaining a service level that is acceptable to drivers. Many factors contribute to the capacity of a roadway including:

- Geometry of the road, including number of lanes, horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;
- Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- Access control, including streets and driveways, or lack thereof, along the roadway;
- Development of the road, including residential, commercial, and industrial developments;
- Number of traffic signals along the route;
- Peaking characteristics of the traffic on the road;
- Characteristics of side-roads feeding into the road; and
- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

2002 Traffic Capacity Analysis

The comparison of the 2002 travel demand volumes for the major roadways in the planning area to the current practical capacities for these roadways did not identify any deficiencies in the planning area.

2030 Traffic Capacity Analysis

The capacity deficiency analysis for the 2030 design year examined the existing street system and determined that NC 200 will be the only road that will exceed practical capacity within the planning area by the design year.

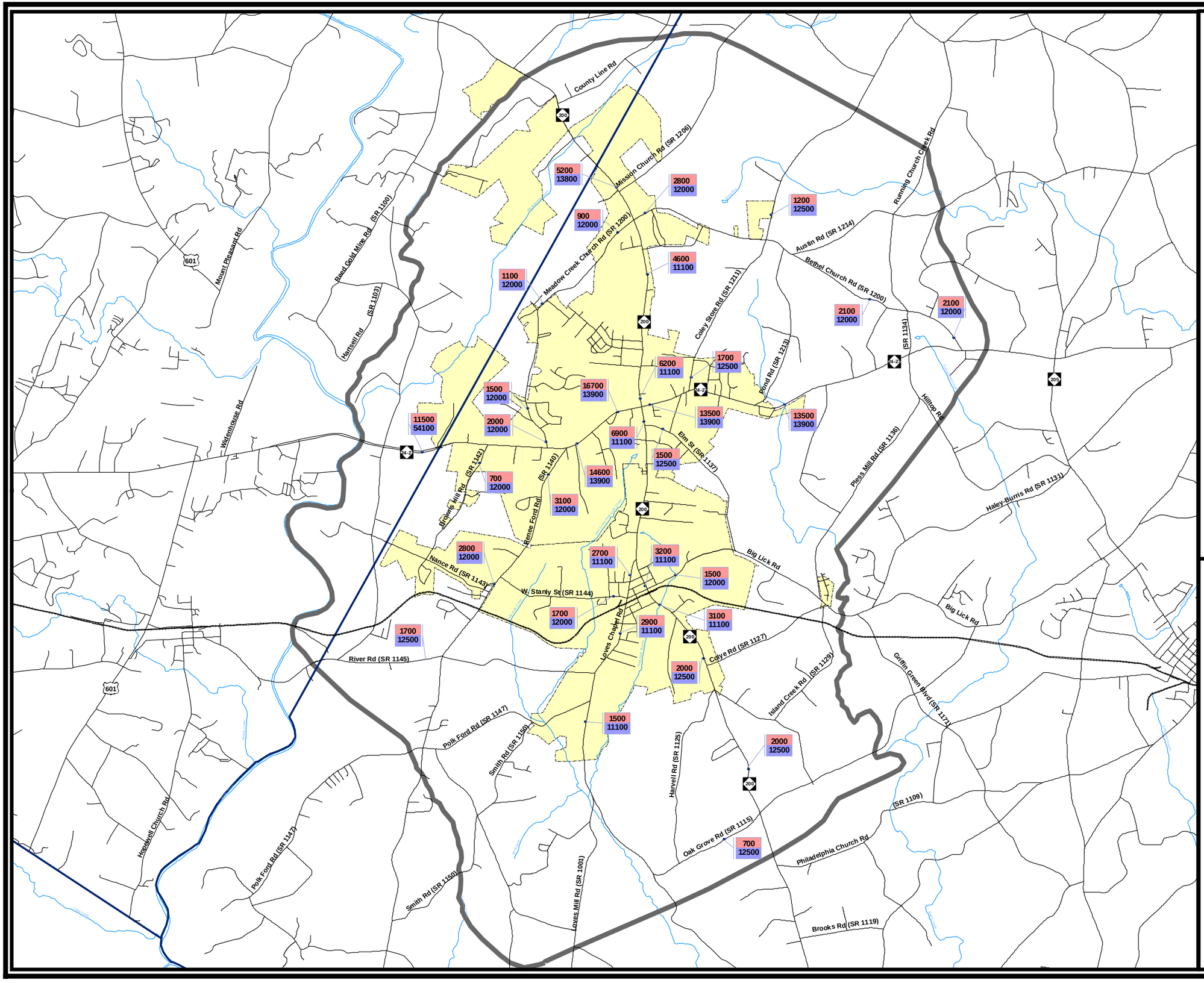

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FIGURE 9

2002 AADT COUNTS

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LEGEND

- STUDY AREA
- MUNICIPAL BOUNDARIES
- EXISTING VOLUMES
- CAPACITY

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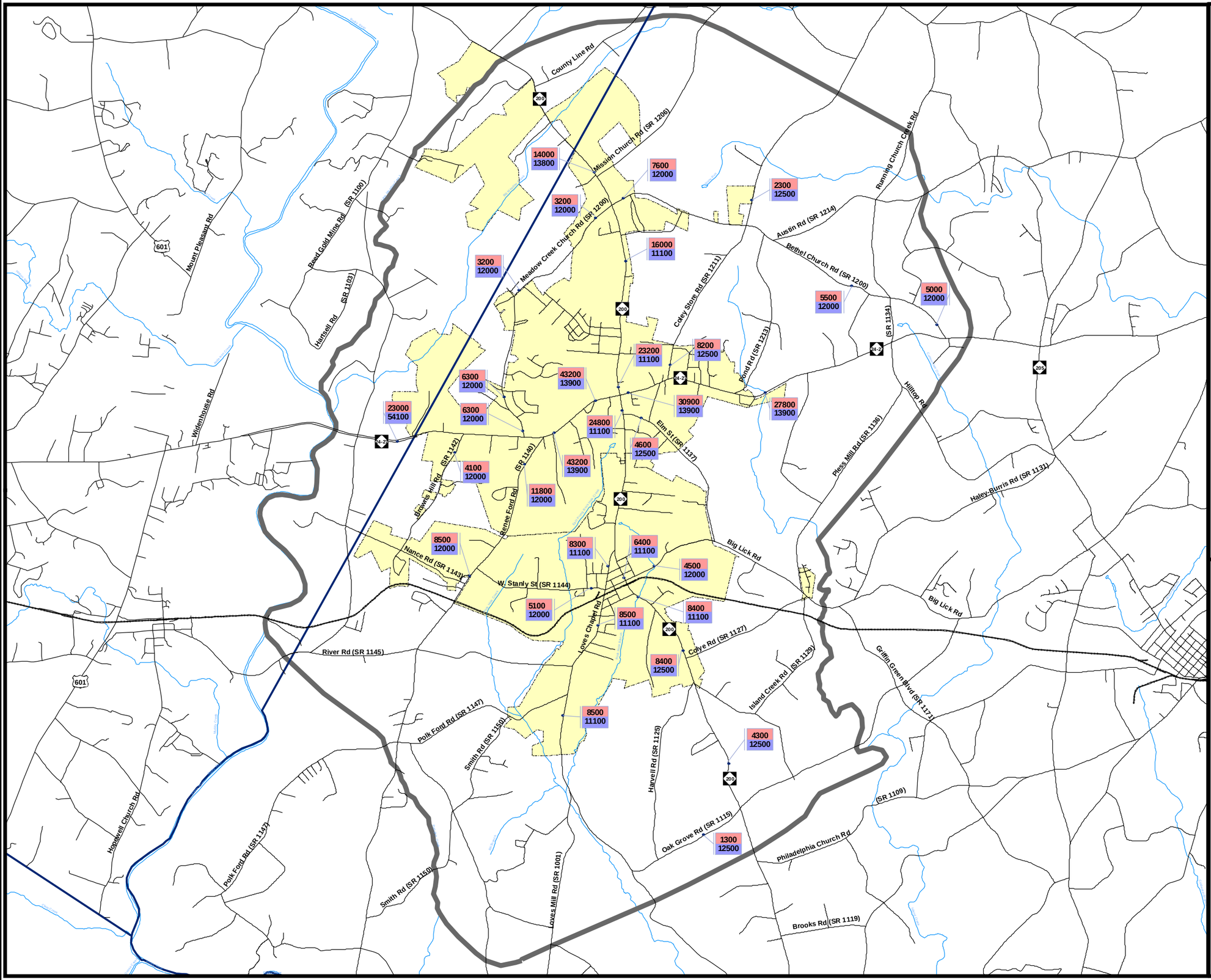
FIGURE 10

2030 AADT COUNTS



LEGEND

- STUDY AREA
- MUNICIPAL BOUNDARIES
- PROJECTED VOLUMES
- CAPACITY

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Bridge Conditions

Bridges are an important element of a highway system. Any bridge deficiency will affect the efficiency of the entire transportation system. In addition, bridges present the greatest opportunity of all potential highway failures for disruption of community welfare and loss of life. Therefore, bridges must be constructed to the same, or higher, design standards as the system of which they are a part and must be inspected regularly to ensure the safety of the traveling public. Every effort should be made when replacing bridges as to not create a barrier for pedestrians and bicyclists. Coordination for bridge replacements should include the Division of Bicycle and Pedestrian Transportation.

The NCDOT Bridge Maintenance Unit inspects all bridges in North Carolina at least once every two years. A sufficiency rating for each bridge is calculated and establishes the eligibility and priority for replacement. Bridges having the highest priority are replaced as Federal and State funds become available.

A bridge is considered deficient if it is either Structurally Deficient or Functionally Obsolete. A bridge at least ten years old is considered structurally deficient if it is in relatively poor condition or has insufficient load-carry capacity, due to either the original design or to deterioration. The bridge is considered to be functionally obsolete if it is narrow, has inadequate under-clearances, has insufficient load-carrying capacity, is poorly aligned with the roadway, and can no longer adequately serve existing traffic. A bridge must be classified as deficient in order to qualify for Federal replacement funds. In addition, the bridge must have a certain sufficiency rating to qualify for these funds. To qualify for replacement, the sufficiency rating must be less than 50%; for rehabilitation, the sufficiency rating must be less than 80%. Deficient bridges within the planning area are given in **Table 3** with the location of these bridges shown in **Figure 11**.

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FIGURE 11

DEFICIENT BRIDGES

LEGEND

- STUDY AREA
- MUNICIPAL BOUNDARIES
- DEFICIENT BRIDGES

Table 3. Structurally Deficient & Functionally Obsolete Bridges Located within the Planning Area

Identify Number	Bridge Number	Location	Sufficiency Rating	Year Built	Remaining Life
1	125	On Big Lick Road (SR 1130) over creek	55.7	1951	19 years
2	134	On Renee Ford Road (SR 1140) over railroad	68.9	1936	19 years
3	135 ~	On Polk Ford Road (SR 1147) over creek	40.4	1959	10 years
4	209 ~	On Pless Mill Road (SR 1136) over creek	29	1959	15 years
5	138	On Reed Mine Road (SR 1100) over creek	70.3	1959	36 years
6	22	On NC 24-27 over creek	56.1	1923	26 years

~ Found in 2004 - 2010 TIP

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IV. Environmental Screening

In recent years, the environmental considerations associated with transportation construction have come to the forefront of the planning process. Section 102 of the National Environmental Policy Act (NEPA) requires the completion of an Environmental Impact Statement (EIS) for projects that have a significant impact on the environment. The EIS includes impacts on wetlands, wildlife, water quality, historic properties, and public lands. While this report does not cover environmental issues to the detail of an EIS consideration for many of these factors was incorporated into the development of the Comprehensive Transportation Plan and related recommended improvements. Environmental features found in the planning area are shown in **Figure 12**. The environmental data used in the evaluation of the Comprehensive Transportation Plan was obtained in 2002 from the NCDOT Geographic Information System (GIS) Unit of NCDOT and the Center for Geographic Information and Analysis (CGIA) and reflects the most current data available at that time. Prior to the implementing any transportation projects, further environmental analysis is necessary.

Wetlands

Wetlands are those lands where saturation with water is the dominant factor in determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands are crucial ecosystems in our environment. They help regulate and maintain the hydrology of our rivers, lakes, and streams by storing and slowly releasing floodwaters. Wetlands help maintain the quality of water by storing nutrients, reducing sediment loads, and reducing erosion. They are also critical to fish and wildlife populations by providing an important habitat for approximately one-third of the plant and animal species that are federally listed as threatened or endangered. The National Wetland Inventory showed several wetlands throughout the planning area.

Threatened and Endangered Species

The Threatened and Endangered Species Act of 1973 allows the U. S. Fish and Wildlife Service to impose measures on the Department of Transportation to mitigate the environmental impacts of a transportation project on endangered animal and plant species as well as critical wildlife habitats. Locating any rare species that exist within the planning area during this early planning stage will help to avoid or minimize impacts.

A preliminary review of the Federally Listed Threatened and Endangered Species in the planning area was completed to determine what effects, if any, the recommended improvements may have on wildlife. Mapping from the N.C. Department of Environment and Natural Resources revealed occurrences of threatened or endangered plant and/or animal species in the planning area which

are summarized in **Table 4**. These species are not impacted by any recommendations found in the Comprehensive Transportation Plan.

Table 4 Threatened or Endangered Species within the Planning Area				
Species	**Common Name**	**Major Group**	**Status**	
			NC	**Federal**
Etheostoma Collis	Carolina Darter	Fish	SC	FSC
Xeric Hardpan Forest	-	Natural Community	S3	-
Dry Oak - Hickory Forest	-	Natural Community	S4	-
Baptisia Alba	Thick-Pod White Wild Indigo	Vascular Plant	S2	-

* See **Appendix E** for definitions of status.

Historic Sites

Section 106 of the National Historic Preservation Act requires the Department of Transportation to identify historic properties listed in, as well as eligible for, the National Register of Historic Places (NRHP). The NCDOT must consider the impacts of transportation projects on these properties and consult with the Federal Advisory Council on Historic Preservation.

N.C. General Statute 121-12(a) requires the NCDOT to identify historic properties listed on the National Register, but not necessarily those that are eligible to be listed. The NCDOT must consider the impacts and consult with the N.C. Historical Commission, but is not bound by their recommendations.

The location of historic sites within the planning area was investigated to determine any possible impacts resulting from the recommended improvements. This investigation identified only one property listed on the NRHP, which is the Reed Gold Mine, located on Reed Mine Road. However, this historic building site will not be impacted by any of the recommended improvements.

Archaeological Sites

The location of recorded archaeological sites was researched to determine the possible impacts of proposed roadway projects. This initial investigation identified several archaeological sites outside of the planning area found in **Table 5**. All are less than a mile away from the planning boundary, but archaeological sites are often difficult to identify without actual field excavation. As a result, possible sites may not be identified during the initial planning process and each proposed project should be evaluated individually prior to construction.

Table 5 Archaeological Sites			
Site Name	**Prehistoric**	**Historic**	**Status**
Reed House		Yes	No above ground remains
Stirewalt	Yes	Yes	No above ground remains
Boiler Pit		Yes	Above ground Remains
Kelly House		Yes	Above ground Remains
Pleba House	Yes	Yes	No above ground remains
Pera House	Yes	Yes	No above ground remains
Reed Blacksmithy		Yes	Above ground remains
Grist	Yes	Yes	No above ground remains
Stamp Mill		Yes	No above ground remains

Educational Facilities

The location of educational facilities in the planning area was considered during the development of the transportation plan. No proposed facilities or improvements shall displace any school or other educational facility. The implementation of the Transportation Plan will result in positive effects on educational facilities in the planning area by providing access to a potential school.

Demographics

As mandated by Title VI of the Civil Rights Act of 1964 and Executive Order 12898, the proposed actions recommended in the Comprehensive Transportation Plan have been reviewed with respect to impacts to minority and low-income populations established in the 2000 U.S. Census.

NCDOT TPB
TRANSPORTATION PLANNING BRANCH

FIGURE 12

ENVIRONMENTAL FEATURES

LEGEND

- SCHOOLS
- NATIONAL POLLUTANT DISCHARGE
- PIPE, TELEPHONE, AND ELECTRIC LINES
- RIVERS AND STREAMS
- NATIONAL WETLAND INVENTORY
- NATIONAL WETLAND INVENTORY
- RECREATIONAL PARKS
- ROADS
- RAILROADS
- STUDY AREA
- COUNTY BOUNDARY
- MUNICIPAL BOUNDARIES

N
W E
S

CITY OF
LOCUST
AND
TOWN OF
STANFIELD

STANLY COUNTY
NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING BRANCH

IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

0 800 1600 3200 4800 6400
FEET

BASE MAP DATE: JANUARY 2003

V. Public Involvement

Overview

Since the passage of the Federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the emphasis on public involvement in transportation has increased. Although public participation has been an element of long range transportation planning in the past, these regulations call for a much more proactive approach. The NCDOT Transportation Planning Branch has a long history of making public involvement a key element in the development of any long range transportation plan; no matter the size of the city and/or planning area. This chapter is designed to provide an overview of the public involvement elements implemented into the development of the comprehensive transportation plan for the planning area.

Study Initiation

The Locust Transportation Plan update study was requested on September 26, 2000, by way of an official letter from the City of Locust. In this letter, the City outlined some specific needs and concerns related to the 1985 Thoroughfare Plan. The Transportation Planning Branch met with the City on January 16, 2002, to identify the primary transportation concerns and to define the scope of the study. After noting the proximity of the Town of Stanfield to the City of Locust, it was determined that perhaps the study should also include the Town of Stanfield. The Transportation Planning Branch met with the Town of Stanfield on October 24, 2002, to identify the primary transportation concerns and to determine if Stanfield would like to be included in the comprehensive transportation plan study.

Public Meetings

One public meeting was held during the development of the Locust and Stanfield Transportation Plan on December 5, 2002.

Public Hearings

February 5, 2004

A public hearing was held in the Locust City Hall as part of the City Council meeting. The purpose of this meeting was to discuss the findings from the study including deficiencies, improvements, and recommendations, and to solicit public input. Comments received included the following:

- There was concern with the boulevard recommendation for NC 200. However, several council members and a citizen spoke in favor of this recommendation because of the aesthetic value of this type of facility and because it would deter strip development.
- There was concern that the sight distance on Browns Hill Road needs to be improved.

- There was concern about perceived needs such as a signal at Meadow Creek Church Road and NC 24/27 and the widening of NC 200 to three lanes for the interim timeframe.

May 6, 2004
A public hearing was held in the Stanfield Town Hall as part of the Town Council meeting. The purpose of this meeting was to discuss the findings from the study including deficiencies, improvements, recommendations, and the railroad findings, and to solicit their input on the recommendations. There were no comments received at the public hearing.

VI. Conclusion

Locust and Stanfield are growing communities that will require improvements to their transportation systems over the next thirty years. It is the responsibility of the City and Town to take the initiative for the implementation of the Comprehensive Transportation Plan. It is imperative that the local areas aggressively pursue funding for desired projects. Questions regarding funding, projects, planning, and modes of transportation should be addressed to the appropriate Branch within NCDOT. **Appendix A** includes contact information for many of these Branches. If changes are required for any element of the Comprehensive Transportation Plan, then all other elements must be reviewed for resulting impacts. Prior to implementation of any transportation projects, additional public involvement and analysis of impacts to the natural environment will need to be conducted.

APPENDIX A

NCDOT
Contacts

Resources & Contacts

North Carolina Department of Transportation

Customer Service Office
1-877-DOT4YOU
(1-877-368-4968)

Secretary of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501
(919) 733-2520

Board of Transportation Member
Contact information for the current Board of Transportation Member for your area may be accessed from the NCDOT homepage on the worldwide web *(http://www.ncdot.org/board/)* or by calling toll free 1-877-DOT4YOU.

Highway Division 10

- **Division Engineer**
  Contact the Division Engineer with general questions concerning NCDOT activities within Division 10 or information on Small Urban Funds.
  716 West Main St.
  Albemarle, NC 28001
  (704) 982-0101

- **Division Construction Engineer**
  Contact the Division Construction Engineer for information concerning major roadway improvements under construction.
  716 West Main St.
  Albemarle, NC 28001
  (704) 982-0101

- **Division Traffic Engineer**
  Contact the Division Traffic Engineer for information concerning high-crash locations.
  716 West Main St
  Albemarle, NC 28001
  (704) 982-0101

- **District Engineer**
  Contact the District Engineer for information regarding Driveway Permits, Right of Way Encroachments, and Development Reviews.
  615 Concord Rd.
  Albemarle, NC 28001
  (704) 982-0104

- **County Maintenance Engineer**
  Contact the County Maintenance Engineer regarding any maintenance activities, such as drainage adjacent to state roadways.
  913 Coble Avenue
  Albemarle, NC 28001
  (704) 983-5146

- **Transportation Planning Branch**
  Contact the Transportation Planning Branch with long-range planning questions.
  1554 Mail Service Center
  Raleigh, NC 27699-1554
  (919) 715-5737

- **Secondary Roads Office**
  Contact the Secondary Roads Officer for information regarding the Industrial Access Funds Program or paving of secondary roads.
  1535 Mail Service Center
  Raleigh, NC 27699-1535
  (919) 733-3250

- **Program Development Branch**
  Contact the Program Development Branch for information concerning Roadway Official Corridor Maps and the Transportation Improvement Program (TIP).
  1542 Mail Service Center
  Raleigh, NC 27699-1542
  (919) 733-2031

- **Project Development & Environmental Analysis Branch**
  Contact PDEA for information on environmental studies for projects that are included in the TIP.
  1548 Mail Service Center
  Raleigh, NC 27699-1548
  (919) 733-3141

- **Traffic Engineering & Safety Systems Branch**
  Contact the Traffic Engineering & Safety Systems Branch for information regarding Development Reviews and signal issues.
  1561 Mail Service Center
  Raleigh, 27699-1561
  (919) 733-3915

- **Highway Design Branch**
  Contact the Highway Design Branch for information regarding alignments for projects that are included in the TIP.
  1584 Mail Service Center
  Raleigh, 27699-1584
  (919) 250-4001

- **Bicycle and Pedestrian Division**
  Contact the Bicycle and Pedestrian Division for information regarding projects in the TIP, funding, and events.
  1552 Mail Service Center
  Raleigh, 27699-1552
  (919) 733-2804

- **Public Transportation Division**
  Contact the Public Transportation Division for information regarding planning and funding for public transportation projects.
  1550 Mail Service Center
  Raleigh, 27699-1550
  (919) 733-4713

- **Railroad Division**
  Contact the Railroad Division for information regarding engineering and safety, operations, and planning.
  1553 Mail Service Center
  Raleigh, 27699-1553
  (919) 733-7245

- **Other departments**

  Contact information for other departments within the NCDOT not listed here are available at the NCDOT homepage on the worldwide web (http://www.ncdot.org/) or by calling 1-877-DOT4YOU.

APPENDIX B

Definitions of Comprehensive Transportation Plan Categories

Definitions for CTP Maps

Highway Map

- Freeways[1]
  - Functional purpose – high mobility, high volume, high speed
  - Posted speed – 55 mph or greater
  - Cross section – minimum four lanes with continuous median
  - Multi-modal elements – High Occupancy Vehicles (HOV)/High Occupancy Transit (HOT) lanes, busways, truck lanes, park-and-ride facilities at/near interchanges, adjacent shared use paths (separate from roadway and outside ROW)
  - Type of access control – full control of access
  - Access management – interchange spacing (urban – one mile; non-urban – three miles); at interchanges on the intersecting roadway, full control of access for 1,000' or for 350' plus 650' island or median; use of frontage roads, rear service roads
  - Intersecting facilities – interchange or grade separation (no signals or at-grade intersections)
  - Driveways – not allowed
- Expressways[1]
  - Functional purpose – high mobility, high volume, medium-high speed
  - Posted speed – 45 to 60 mph
  - Cross section – minimum four lanes with median
  - Multi-modal elements – HOV lanes, busways, very wide paved shoulders (rural), shared use paths (separate from roadway but within ROW)
  - Type of access control – limited or partial control of access;
  - Access management – minimum interchange/intersection spacing 2,000 feet; median breaks only at intersections with minor roadways or to permit U-turns; use of frontage roads, rear service roads; driveways limited in location and number; use of acceleration/deceleration or right turning lanes
  - Intersecting facilities – interchange; at-grade intersection for minor roadways; right-in/right-out and/or left-over or grade separation (no signalization for through traffic)
  - Driveways – right-in/right-out only; direct driveway access via service roads or other alternate connections
- Boulevards
  - Functional purpose – moderate mobility; moderate access, moderate volume, medium speed
  - Posted speed – 30 to 55 mph
  - Cross section – two or more lanes with median (median breaks allowed for U-turns per current NCDOT *Driveway Manual*
  - Multi-modal elements – bus stops, bike lanes (urban) or wide paved shoulders (rural), sidewalks (urban - local government option)
  - Type of access control – limited control of access, partial control of access, or no control of access
  - Access management – two lane facilities may have medians with crossovers, medians with turning pockets or turning lanes; use of acceleration/deceleration or right turning lanes is optional; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged

- Intersecting facilities – at grade intersections and driveways; interchanges at special locations with high volumes
- Driveways – primarily right-in/right-out, some right-in/right-out in combination with median leftovers; major driveways may be full movement when access is not possible using an alternate roadway

- Other Major Thoroughfares
  - Functional purpose – balanced mobility and access, moderate volume, low to medium speed
  - Posted speed – 25 to 55 mph
  - Cross section – four or more lanes without median
  - Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
  - Type of access control – no control of access
  - Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
  - Intersecting facilities – intersections and driveways
  - Driveways – full movement on two lane roadway with center turn lane as permitted by the current NCDOT *Driveway Manual*
- Minor Thoroughfares
  - Functional purpose – balanced mobility and access, moderate volume, low to medium speed
  - Posted speed – 25 to 45 mph
  - Cross section – ultimately three lanes (no more than one lane per direction) or less without median
  - Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
  - ROW – no control of access
  - Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
  - Intersecting facilities – intersections and driveways
  - Driveways – full movement on two lane with center turn lane as permitted by the current NCDOT *Driveway Manual*
- Existing – Roadway facilities that are not recommended to be improved.
- Needs Improvement – Roadway facilities that need to be improved for capacity, safety, or system continuity. The improvement to the facility may be widening, other operational strategies, increasing the level of access control along the facility, or a combination of improvements and strategies. "**Needs improvement" does not refer to the maintenance needs of existing facilities.**
- Recommended – Roadway facilities on new location that are needed in the future.
- Interchange – Through movement on intersecting roads is separated by a structure. Turning movement area accommodated by on/off ramps and loops.
- Grade Separation – Through movement on intersecting roads is separated by a structure. There is no direct access between the facilities.
- Full Control of Access – Connections to a facility provided only via ramps at interchanges. No private driveway connections allowed.
- Limited Control of Access – Connections to a facility provided only via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed.

- Partial Control of Access – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. Private driveway connections shall be defined as a maximum of one connection per parcel. One connection is defined as one ingress and one egress point. These may be combined to form a two-way driveway (most common) or separated to allow for better traffic flow through the parcel. The use of shared or consolidated connections is highly encouraged.
- No Control of Access – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways.

Public Transportation and Rail Map

- Bus Routes – The primary fixed route bus system for the area. Does not include demand response systems.
- Fixed Guideway – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.
- Operational Strategies – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- Rail Corridor – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
  - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
  - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
  - Recommended – It is desirable for future rail to be considered to serve an area.
- High Speed Rail Corridor – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
  - Existing – Corridor where high speed rail service is provided (there are currently no existing high speed corridor in North Carolina).
  - Recommended – Proposed corridor for high speed rail service.
- Rail Stop – A railroad station or stop along the railroad tracks.
- Intermodal Connector – A location where more than one mode of public transportation meet such as where light rail and a bus route come together in one location or a bus station.
- Park and Ride Lot – A strategically located parking lot that is free of charge to anyone who parks a vehicle and commutes by transit or in a carpool.

Bicycle Map

- On Road-Existing – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.
- On Road-Needs Improvement – At the systems level, it is desirable for the highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.
- On Road-Recommended – At the systems level, it is desirable for a recommended highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.
- Off Road-Existing – A facility that accommodates bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way.

- Off Road-Needs Improvement – A facility that accommodates bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to: widening, paving (not re-paving), improved horizontal or vertical alignment.
- Off Road-Recommended – A facility needed to accommodate bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way. This may also include greenway segments that do not necessarily serve a transportation function but intersect recommended facilities on the highway map or public transportation and rail map.

Pedestrian Map

Format for the pedestrian map is under development.

[1]Every effort will be made to ensure that all Tier 1 (Statewide importance) facilities on the NCMIN (North Carolina Multimodal Investment Network) will be Freeway or Expressway on the Comprehensive Transportation Plan

APPENDIX C

Comprehensive Transportation Plan Tabulations & Recommendations

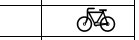
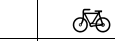
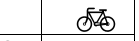
Highway

Facility & Segment From	To	Distance (mi)	Existing System Cross-Section (ft)	Existing System Cross-Section lanes	Existing System ROW (ft)	Existing System Speed Limit (mph)	Existing System Capacity (vpd)	Existing System 2002 ADT	Proposed System Capacity (vpd)	Proposed System 2030 ADT	Proposed System Cross-Section	Proposed System ROW (ft)	Other Maps
NC 24-27													
Robinson Road (SR 1146)	Stanly County Line	1.52	48	4	200	55	54,100	11,500	51,400	23,000	ADQ	ADQ	
Stanly County Line	Locust Western City Limits	0.15	48	4	200	55	54,100	11,500	51,400	23,000	ADQ	ADQ	
Locust Western City Limits	Browns Hill Road (SR 1142)	0.21	48	4	200	35	54,100	11,500	51,400	23,000	ADQ	ADQ	
Browns Hill Road (SR 1142)	Renee Ford Road (SR 1140)	0.13	60	2	100	35	13,900	14,600	13,900	43,200	ADQ	ADQ	
Renee Ford Road (SR 1140)	Simpson Road	0.03	30	2	60	35	13,900	14,600	13,900	43,200	ADQ	ADQ	
Simpson Road	NC 200	1.15	34	3	60	35	13,900	16,700	13,900	43,200	ADQ	ADQ	
NC 200	Running Church Creek Road (SR 1134)	3.57	29	2	60	55	13,900	13,500	13,900	31,000	ADQ	ADQ	
NC 200													
Buster Road (SR 1118)	Stanfield Southern Town Limits	4.65	22	2	100	55	12,500	2,000	12,500	4,300	F	94	
Stanfield Southern Town Limits	Stanfield Southern Town Limits	0.07	22	2	60	55	12,500	2,000	12,500	4,300	F	94	
Stanfield Southern Town Limits	Coyle Road (SR 1127)	0.21	22	2	60	35	12,500	2,000	12,500	4,300	F	94	
Coyle Road (SR 1127)	Big Lick Road (SR 1130)	1.38	32	2	60	45	11,100	3,100	11,100	8,400	F	94	
Big Lick Road (SR 1130)	Loves Chapel Road (SR 1001)	0.10	32	2	60	55	11,100	3,200	11,100	6,400	F	94	
Loves Chapel Road (SR 1001)	Elm Street (SR 1137)	0.17	24	2	100	35	11,100	7,000	11,100	22,600	F	94	
Elm Street (SR 1137)	NC 24-27	0.17	40	2	100	35	11,100	7,000	11,100	24,800	F	94	
NC 24-27	Dixon Road	0.17	40	2	100	35	11,100	6,100	11,100	23,100	F	94	
Dixon Road	Danita Drive (SR 1204)	0.23	24	2	100	35	11,100	4,600	11,100	23,100	F	94	
Danita Drive (SR 1204)	Locust Northern City Limits	1.59	26	2	100	35	11,100	4,600	11,100	16,000	F	94	
Locust Northern City Limits	Cabarrus County Line	0.46	26	2	100	55	13,800	5,200	13,800	14,000	F	94	
Loves Mill Road (SR 1001)													
Union County Line	Stanfield Town Limits	0.39	20	2	N/A	55	11,100	1,500	11,100	4,900	K	70	
Stanfield Town Limits	River Road (SR 1145)	0.47	40	2	N/A	35	11,100	2,900	11,100	8,322	K	70	
Big Lick Road (SR 1130)													
Oak Grove Road (SR 1115)	West of Coyle Road (SR 1127)	1.65	18	2	N/A	55	12,000	2,100	12,000	4,500	K	70	
West of Coyle Road (SR 1127)	NC 200	1.75	18	2	N/A	35	12,000	1,500	12,000	4,500	K	70	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway  Public Transportation and Rail  Bicycle  Pedestrian 

Highway

Facility & Segment From	To	Distance (mi)	Existing System Cross-Section (ft)	Existing System Cross-Section lanes	Existing System ROW (ft)	Existing System Speed Limit (mph)	Existing System Capacity (vpd)	Existing System 2002 ADT	Proposed System Capacity (vpd)	Proposed System 2030 ADT	Proposed System Cross-Section	Proposed System ROW (ft)	Other Maps
Elm Street (SR 1137)													
NC 200	Locust City Limits	0.59	18	2	N/A	35	12,500	1,500	12,500	4,600	K	70	
Locust City Limits	Big Lick Road (SR 1130)	1.00	18	2	N/A	55	12,500	1,500	12,500	4,600	K	70	
Renee Ford Road (SR 1140)													
NC 24-27	Locust City Limits	0.98	18	2	60	35	12,000	3,300	12,000	11,800	K	70	
Locust City Limits	Stanfield Town Limits	0.72	18	2	60	45	12,000	2,800	12,000	8,500	K	70	
Stanfield Town Limits	Planning Area Boundary	0.06	18	2	60	55	12,000	2,800	12,000	8,500	K	70	
Stanly Street (SR 1144)													
Renee Ford Road (SR 1140)	East Prong Rock Hole Ceek	0.90	20	2	N/A	35	12,000	1,700	12,000	5,100	K	70	
East Prong Rock Hole Ceek	Loves Mill Road (SR 1001)	0.34	24	2	N/A	35	12,500	1,700	12,500	5,100	K	70	
Meadow Creek Church/ Bethel Church Road (SR 1200)													
NC 24-27	Locust Southern City Limits	0.54	20	2	N/A	35	12,000	2,000	12,000	6,300	K	70	
Locust Southern City Limits	Locust City Limits	0.48	20	2	N/A	55	12,000	1,500	12,000	6,300	K	70	
Locust City Limits	Locust City Limits	0.56	20	2	N/A	35	12,000	1,100	12,000	6,300	K	70	
Locust City Limits	Locust Eastern City Limits	0.72	20	2	N/A	55	12,000	900	12,000	3,200	K	70	
Locust Eastern City Limits	E Christy Lane	0.37	20	2	N/A	35	12,000	2,800	12,000	3,200	K	70	
E Christy Lane	W Quail Run	0.19	17	2	N/A	35	12,000	2,800	12,000	7,600	K	70	
W Quail Run	NC 24-27	3.38	17	2	N/A	55	12,000	1,800	12,000	5,500	K	70	
Coley Store Road (SR 1211)													
Pond Road (SR 1210)	Bethel Church Road (SR 1200)	2.82	18	2	N/A	55	12,500	1,200	12,500	8,200	K	70	
Bethel Church Road (SR 1200)	NC 24-27	1.30	18	2	N/A	55	12,500	1,700	12,500	8,200	K	70	
Oak Grove Road (SR 1115)													
Greene Road (SR 1132)	Griffin-Greene Road (SR 1117)	1.00	20	2	60	55	12,500	900	12,500	1,100	K	70	
Griffin-Greene Road (SR 1117)	NC 200	0.14	18	2	60	55	12,500	900	12,500	1,400	K	70	
NC 200	Rushing Road (SR 1124)	2.90	20	2	60	55	12,500	700	12,500	1,300	K	70	
Rushing Road (SR 1124)	Loves Mill Road (SR 1001)	0.76	-	-	-	-	-	-	12,500	1,300	K	70	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway  Public Transportation and Rail  Bicycle  Pedestrian 

Highway

Facility & Segment From	To	Distance (mi)	Existing System Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Capacity (vpd)	2002 ADT	Proposed System Capacity (vpd)	2030 ADT	Cross-Section	ROW (ft)	Other Maps
Browns Hill Road (SR 1142)													
NC 24-27	Locust City Limits	0.25	18	2	60	35	12,000	700	12,000	4,100	K	70	
Locust City Limits	Stanfield Town Limits	0.90	18	2	60	55	12,000	700	12,000	4,100	K	70	
Stanfield Town Limits	Nance Road (SR 1143)	0.55	18	2	60	35	12,000	700	12,000	4,100	K	70	
Browns Hill Road Extension (SR 1142)													
NC 24-27	Browns Hill Road (SR 1142)	0.55	-	-	-	-	-	-	17,300	4,109	K	70	
Reed Mine Trail													
Meadow Church Creek Road	Reed Mine Trail Extension	0.21	-	-	-	-	-	-	17,300	4,300	K	70	
Reed Mine Trail Extension	Scout Road Extension	0.86	-	-	-	-	-	-	17,300	4,300	K	70	
Scout Road Extension	NC 24-27	0.43	-	-	-	-	-	-	17,300	4,300	K	70	

Public Transportation and Rail

Facility and Segment From	To	Class	Speed Limit (mph)	Distance (mi)	Existing System Type	ROW (ft)	Trains per day	Proposed System Type	ROW (ft)	Trains per day	Other Maps
Aberdeen Carolina and Western											
Island Creek (SR 1129)	Coyle Road (SR 1127)	II	25	0.20	Freight	100	1	Freight	100	1	
Coyle Road (SR 1127)	Stanly Street (NC 200)	II	25	1.40	Freight	100	1	Freight	100	1	
Stanly Street (NC 200)	Locust Avenue	II	25	0.20	Freight	100	1	Freight	100	1	
Locust Avenue	Loves Chapel Road (SR 1001)	II	25	0.20	Freight	100	1	Freight	100	1	
Loves Chapel Road (SR 1001)	Pine Bluff Road (SR 1146)	II	25	2.90	Freight	100	1	Freight	100	1	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway Public Transportation and Rail Bicycle Pedestrian

Class I railroads are railraods whose annual income is more than $266.7 million, while Class II railroads are railroads whose annual income is less than $266.7 million.

Bicycle and Pedestrian

Facility and Segment From	To	Distance (mi)	Existing System Cross-Section (ft)	lanes	Proposed System Type	Cross-Section	Other Maps
Big Lick Road (SR 1130)							
Oak Grove Road (SR 1115)	West of Coyle Road (SR 1127)	1.65	18	2	On-road	B-4	
West of Coyle Road (SR 1127)	NC 200	1.75	18	2	On-road	B-4	
Renee Ford Road (SR 1140)							
NC 24-27	Locust City Limits	0.98	18	2	On-road	B-4	
Locust City Limits	Stanfield Town Limits	0.72	18	2	On-road	B-4	
Stanfield Town Limits	Planning Area Boundary	0.06	18	2	On-road	B-4	
Stanly Street (SR 1144)							
Renee Ford Road (SR 1140)	East Prong Rock Hole Ceek	0.90	20	2	On-road	B-4	
East Prong Rock Hole Ceek	Loves Mill Road (SR 1001)	0.34	24	2	On-road	B-4	
Meadow Creek Church/ Bethel Church Road (SR 1200)							
NC 24-27	Locust Southern City Limits	0.54	20	2	On-road	B-4	
Locust Southern City Limits	Locust City Limits	0.48	20	2	On-road	B-4	
Locust City Limits	Locust City Limits	0.56	20	2	On-road	B-4	
Locust City Limits	Locust Eastern City Limits	0.72	20	2	On-road	B-4	
Locust Eastern City Limits	E Christy Lane	0.37	20	2	On-road	B-4	
E Christy Lane	W Quail Run	0.19	17	2	On-road	B-4	
W Quail Run	NC 24-27	3.38	17	2	On-road	B-4	
Easement Facility							
Portion A							
Meadow Creek Church Road	Smith Street	0.65	-	-	Off-road	B-5	
Portion B							
Pineridge Street	NC 24-27	1.15	-	-	Off-road	B-5	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway  Public Transportation and Rail  Bicycle  Pedestrian 

Bicycle and Pedestrian

Facility and Segment From	To	Distance (mi)	Existing System Cross-Section (ft)	lanes	Proposed System Type	Cross-Section	Other Maps
Rock Hole Creek Facility							
Railroad Avenue	River Road (SR 1145)	0.76	-	-	Off-road	B-5	
River Road (SR 1145)	Polk Ford Road (SR 1147)	0.55	-	-	Off-road	B-5	
Polk Ford Road (SR 1147)	River Road (SR 1145)	0.82	-	-	Off-road	B-5	
River Road (SR 1145)	Railroad	0.39	-	-	Off-road	B-5	
Railroad	Railroad Avenue	1.23	-	-	Off-road	B-5	
Simpson Road Facility							
Portion A							
Simpson Road	Redah Road	0.52	-	-	Off-road	B-5	
Portion B							
Portion A	Willow Creek Road	0.18	-	-	Off-road	B-5	
Park and Ride Path							
NC 24-27	Proposed Park and Ride Lot	0.07	-	-	Off-road	B-5	
Proposed Park and Ride Lot	Meadow Creek Church Road (SR 1200)	0.40	-	-	Off-road	B-5	
Loves Mill Road (SR 1001)							
Union County Line	Stanfield Town Limits	0.39	20	2	Pedestrian		
Stanfield Town Limits	River Road (SR 1145)	0.47	40	2	Pedestrian		

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway  Public Transportation and Rail  Bicycle  Pedestrian 

APPENDIX D

Typical
Comprehensive
Transportation
Plan
Cross-Sections

Typical Transportation Cross Sections

Cross section requirements for roadways vary according to the capacity and level of service to be provided. Universal standards in the design of roadways are not practical. Each roadway section must be individually analyzed and its cross section determined based on the volume and type of projected traffic, existing capacity, desired level of service, and available right-of-way. The cross sections are typical for facilities on new location and where right-of-way constraints are not critical. For widening projects and urban projects with limited right-of-way, special cross sections should be developed that meet the needs of the project.

On all existing and proposed roadways delineated on the comprehensive transportation plan, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, **Appendix D** may recommend ultimate needed right-of-way for the following situations:

- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient, and
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment.

Recommended design standards relating to grades, sight distances, degree of curve, superelevation, and other considerations for roadways are given in **Appendix D**. The typical cross sections are described below and are shown on **pages D-5 – D-7**.

A: Four Lanes Divided with Median
Cross section "A" is recommended for freeways/expressways in rural areas. The minimum median width for this cross section is 46 feet, but a wider median is desirable. This cross section could apply to freeways or expressways.

B: Seven Lanes - Curb & Gutter
Cross section "B" is typically not recommended for new projects. When the conditions warrant six lanes, cross section “D” should be recommended. Cross section “B” should be used only in special situations such as when widening from a five-lane section where right-of-way is limited. Even in these situations, consideration should be given to converting the center turn lane to a median so that cross section “D” is the final cross section. This cross section applies to other major thoroughfares.

C: Five Lanes - Curb & Gutter
Typical for other major thoroughfares, cross section "C" is desirable where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

D: Six Lanes Divided with Raised Median - Curb & Gutter
E: Four Lanes Divided with Raised Median - Curb and Gutter
Cross sections "D" and "E" are typically used on expressways/boulevards where left turns and intersecting streets are not as frequent. Left turns would be restricted to a few selected intersections. The 16-ft median is the minimum recommended for an urban boulevard-type cross section. In most instances, monolithic construction should be utilized due to greater cost effectiveness, ease and speed of placement, and reduced future maintenance requirements. In certain cases, grass or landscaped medians result in greatly increased maintenance costs and an increase danger to maintenance personnel. Non-monolithic medians should only be recommended when the above concerns are addressed.

F: Four Lanes Divided – Grass Median
Cross section "F" is typically recommended for expressways/boulevards to enhance the urban environment and to improve the compatibility of expressways/boulevards with residential areas. A minimum median width of 24 ft is recommended, with 30 ft being desirable.

G: Four Lanes - Curb and Gutter
Cross section "G" is recommended for other major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would likely be required at major intersections. This cross section should be used only if the above criteria are met. If right-of-way is not restricted, future strip development could take place and the inner lanes could become de facto left turn lanes.

H: Three Lanes - Curb and Gutter
In urban environments, minor thoroughfares that are proposed to function as one-way traffic carriers would typically require cross section “H”.

I: Two Lanes – Curb and Gutter, Parking both sides
J: Two Lanes – Curb and Gutter, Parking one side
Cross section “I” and “J” are usually recommended for urban minor thoroughfares since these facilities usually serve both land service and traffic service functions. Cross-section “I” would be used on those minor thoroughfares where parking on both sides is needed as a result of more intense development.

K: Two Lanes - Paved Shoulder
Cross section "K" is used in rural areas or for staged construction of a wider multilane cross section. On some minor thoroughfares or US/NC routes, projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time. For areas that are growing and that will require future widening, the full right-of-way of 100 ft should be required. In some instances, local ordinances may not allow the full 100 ft. In those cases, 70 ft should be preserved with the understanding that the full 70 ft will be preserved by use of building setbacks and future street line ordinances.

L: Six Lanes Divided with Grass Median
Cross section “L” is typical for controlled access freeways/expressways. The 46-ft grass median is the minimum desirable width, but variation from this may be permissible depending upon design considerations. Right-of-way requirements are typically 228 ft or greater, depending upon cut and fill requirements.

M: Eight Lanes Divided with Raised Median - Curb and Gutter
Also used for controlled access freeways, cross section "M" may be recommended for expressway/boulevard going through major urban areas or for routes projected to carry very high volumes of traffic.

Bicycle Cross Sections
Cross sections B-1, B-2, B-3, B-4, and B-5 are typical bicycle cross sections. Contact the NCDOT Division of Bicycle and Pedestrian Transportation for more information regarding these cross sections.

B-1: Four Lanes Divided with Wide Outside Lanes
B-2: Five Lanes with Wide Outside Lanes
A widened outside lane is an effective way to accommodate bicyclists riding in the same lane with motor vehicles. With a wide outside lane, motorists do not have to change lanes to pass a bicyclist. The additional width in the outside lane also improves sight distance and provides more room for vehicles to turn onto the roadway. Therefore, on roadways with bicycle traffic, widening the outside lane can improve the capacity of that roadway. Also, by widening the outside lane by a few extra feet both motorists and bicyclists have more space in which to maneuver. This facility type is generally considered for use in urban, suburban, and occasionally rural conditions on roadways where there is a curb and gutter. Wide outside lanes can be applied to several different roadway cross sections.

B-3: Bicycle Lanes on Collector Streets
Bicycle lanes may be considered when it is desirable to delineate road space for preferential use by cyclists. Streets striped with bicycle lanes should be part of a connected bikeway system rather than being an isolated feature. Bicycle lanes function most effectively in mid-block situations by separating bicyclists from overtaking motor vehicles. Integrating bicyclists into complicated intersection traffic patterns can sometimes be problematic. Strip development areas, or roadways with a high number of commercial driveways, tend to be less suitable for bicycle lanes due to frequent and

unpredictable motorist turning movements across the path of straight-through cyclists. Striped bike lanes can be effective as a safety treatment, especially for less-experienced bicyclists. Two-lane residential/collector streets with lower traffic volume, low-posted speed limit, adequate roadway width for both bike lanes and motor vehicle travel lanes, and an absence of complicated intersections. A median-divided multi-lane roadway with lower traffic volumes and a low volume of right and left turning traffic would be a more appropriate location for bicycle lanes than a high traffic volume undivided multi-lane roadway with a continuous center turn lane. Most bicyclists will choose a route that combines direct access with lower traffic volumes. An origin and destination of less than 4 miles is desirable to generate usage on a facility.

B-4: Wide Paved Shoulders
On urban streets with curb and gutter, wide outside lanes and bicycle lanes are usually the preferred facilities. Shoulders for bicycle use are not typically provided on roadways with curb and gutter. On rural roadways where bicycle travel is common, such as roads in coastal resort areas, wide paved shoulders are highly desirable. On secondary roadways without curb and gutter where there are few commercial driveways and intersections with other roadways, many bicyclists prefer riding on wide, smoothly paved shoulders.

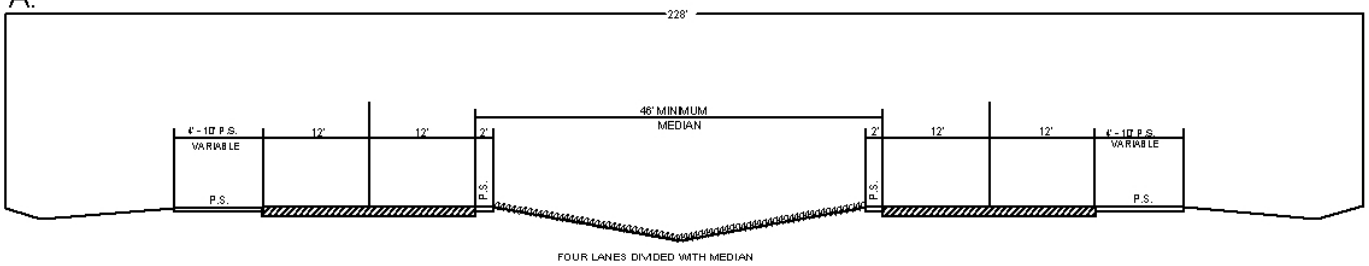
B-5: Multi-use Pathway
When properly located, multi-use pathway can be a safer type of facility for novice and child bicyclists because they do not have to share the path with motor vehicles. The design standards used for this cross section provides adequate width for two-directional use by both cyclists and pedestrians, provisions of good sight distance, avoidance of steep grades and tight curves, and minimal cross-flow by motor vehicles. A multi-use pathway can serve a variety of purposes, including recreation and transportation. This pathway should not be located immediately adjacent to a roadway because of safety considerations at intersections with driveways and roads. Sidewalks should never be used as a multi-use pathway.

General
The urban curb and gutter cross sections all illustrate the sidewalk adjacent to the curb with a buffer such as a utility strip or landscaping between the sidewalk and the minimum right-of-way line. This permits adequate setbacks for the safety of the pedestrians while providing locations for utilities. If it is desired to move the sidewalk farther away from the street to provide additional separation for pedestrians or for aesthetic reasons, additional right-of-way must be provided to insure adequate setbacks for the pedestrian's safety was accomplished while providing locations for utilities.

The right-of-way shown for each typical cross section is the minimum amount required to contain the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right-of-way or construction easements. Obtaining construction easements is becoming the more common practice for urban transportation construction.

TYPICAL HIGHWAY CROSS SECTIONS

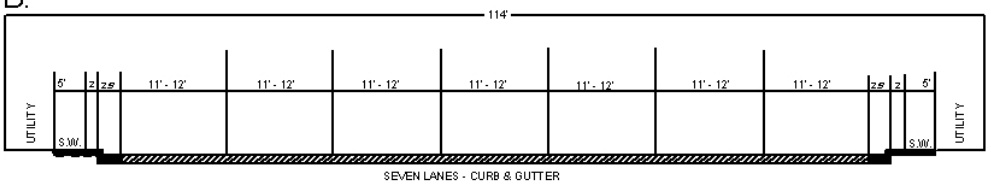
A.



FOUR LANES DIVIDED WITH MEDIAN

Freeway/Expressway

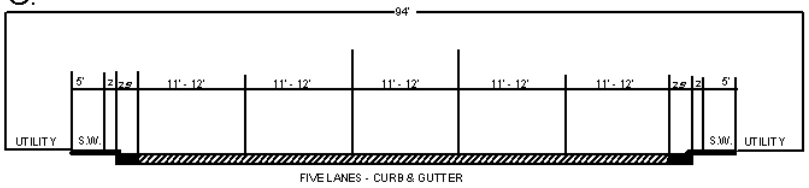
B.



SEVEN LANES - CURB & GUTTER

Other Major Thoroughfare

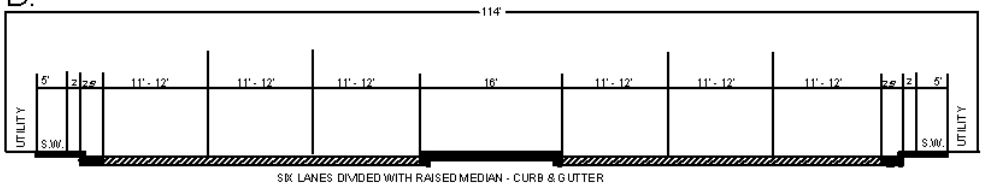
C.



FIVE LANES - CURB & GUTTER

Other Major Thoroughfare

D.

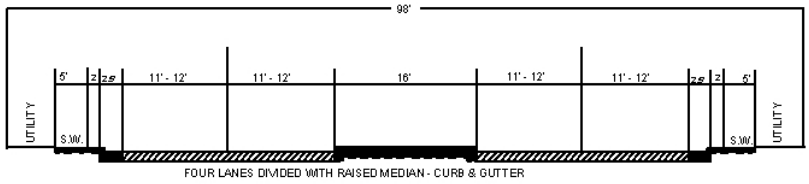


SIX LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

Expressway/Boulevard

TYPICAL HIGHWAY CROSS SECTIONS

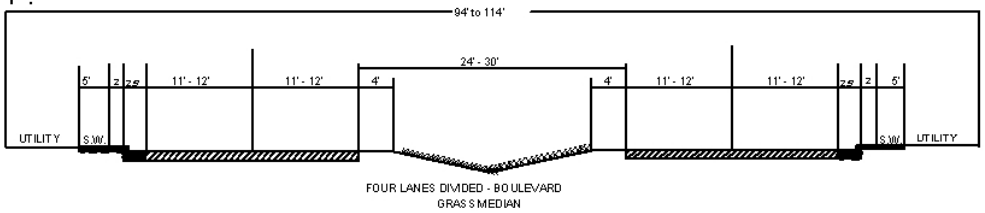
E.



FOUR LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

Expressway/Boulevard

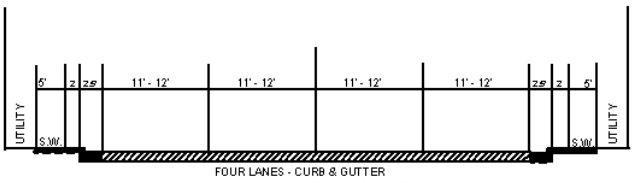
F.



FOUR LANES DIVIDED - BOULEVARD
GRASS MEDIAN

Expressway/Boulevard

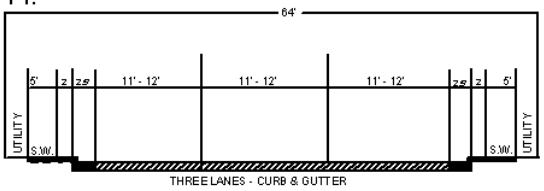
G.



FOUR LANES - CURB & GUTTER

Other Major Thoroughfare

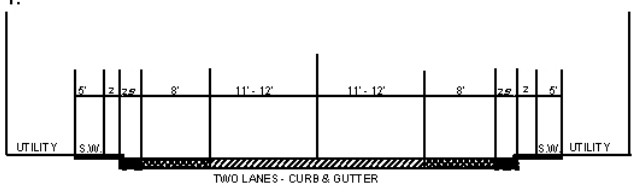
H.



THREE LANES - CURB & GUTTER

Minor Thoroughfare

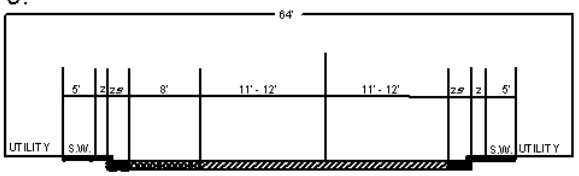
I.



TWO LANES - CURB & GUTTER
PARKING ON EACH SIDE

Minor Thoroughfare

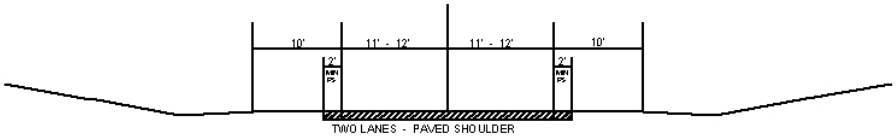
J.



TWO LANES - CURB & GUTTER
PARKING ON ONE SIDE

Minor Thoroughfare

K.

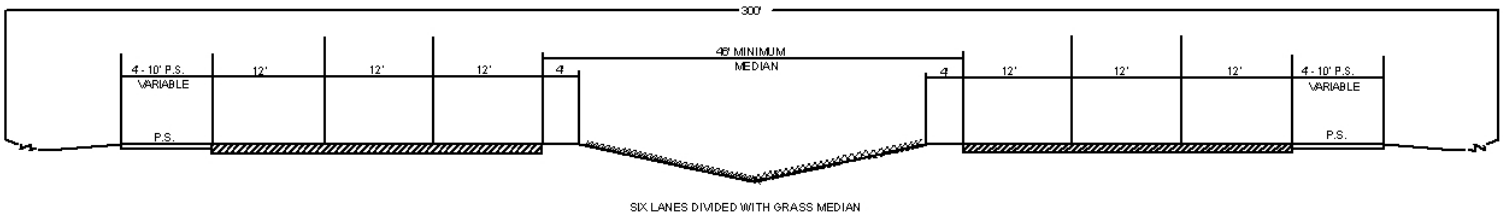


TWO LANES - PAVED SHOULDER

Minor Thoroughfare or US/NC Routes

TYPICAL HIGHWAY CROSS SECTIONS

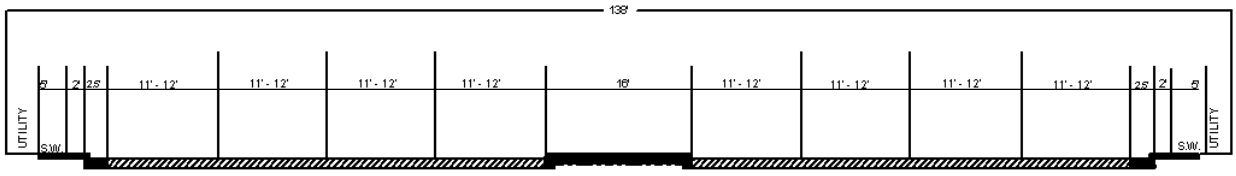
L.



SIX LANES DIVIDED WITH GRASS MEDIAN

Freeway/Expressway

M.



EIGHT LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

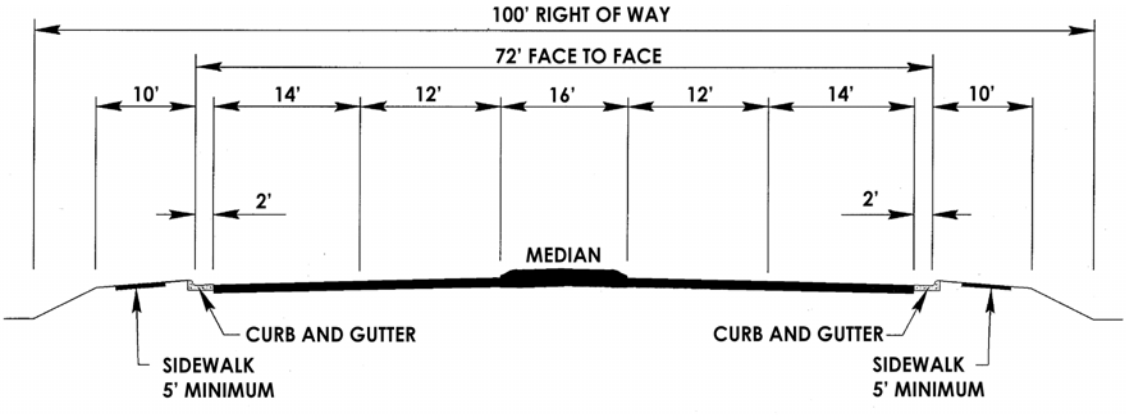
Expressway/Boulevard

Typical Bicycle Cross Sections

WIDE CURB LANES

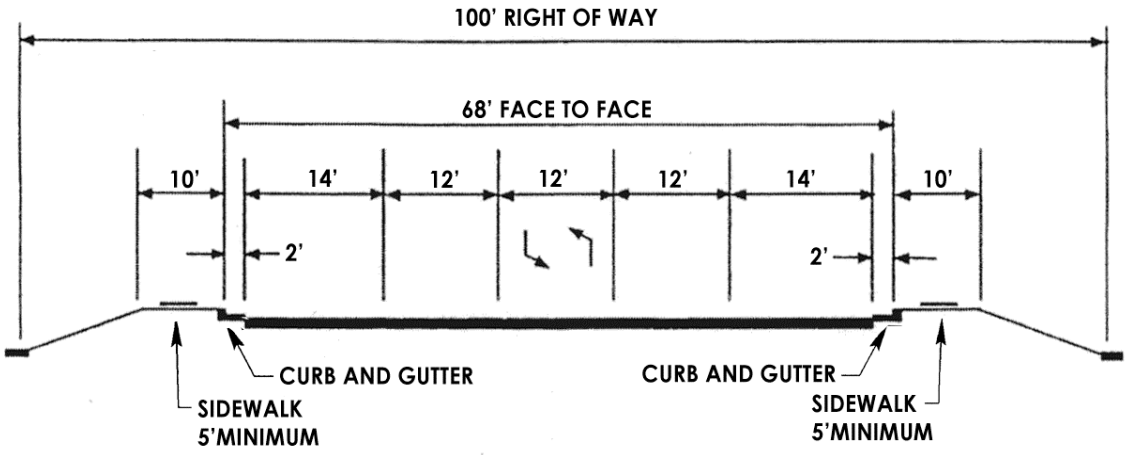
B-1 4-LANE MEDIAN DIVIDED TYPICAL SECTION

With Wide Outside Lanes



B-2 5-LANE TYPICAL SECTION

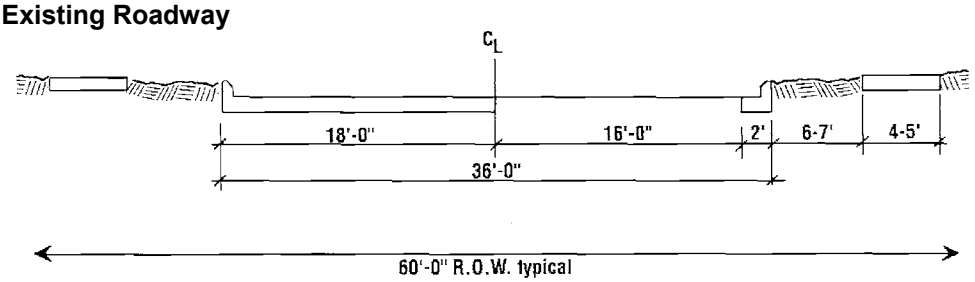
With Wide Outside Lanes



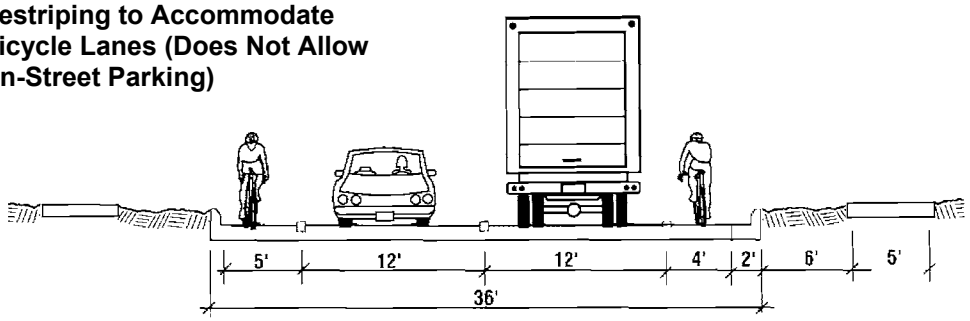
Typical Bicycle Cross Sections

B-3 BICYCLE LANES ON COLLECTOR STREETS

Existing Roadway



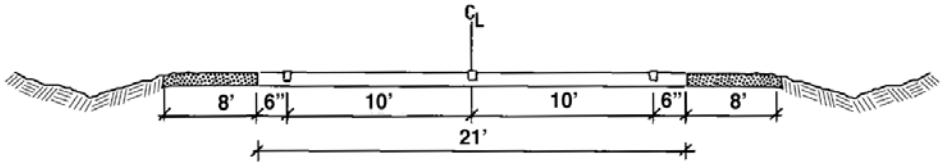
Restriping to Accommodate Bicycle Lanes (Does Not Allow On-Street Parking)



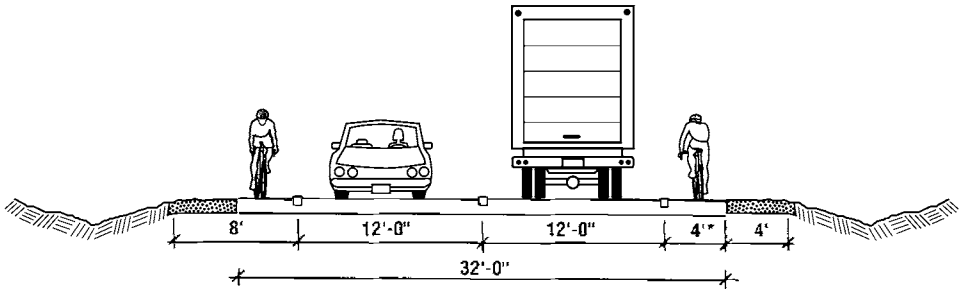
Typical Bicycle Cross Sections

B-4 WIDE PAVED SHOULDERS

Existing Roadway



Roadway Retrofitted with 4-Ft Paved Shoulders

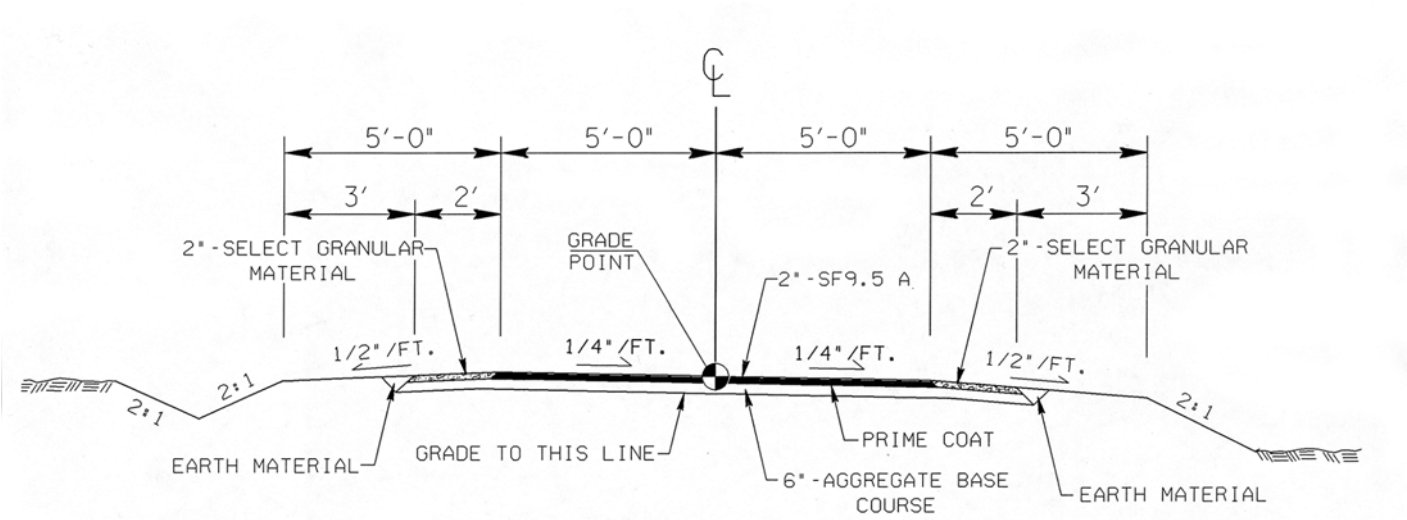


* If speeds are higher than 40 mph, shoulder widths greater than 4' are recommended.

Typical Bicycle Cross Sections

B-5 RECOMMENDED TYPICAL SECTION OF 10-FT ASPHALT PATHWAY

With 2-Ft Select Material Shoulder



APPENDIX E

Definitions
of
Environmental
Status
Codes

Definitions Of Environmental Status Codes:
Natural Heritage Program List

North Carolina Status		Descriptions of Plants*
E	**Endangered**	"Any species or higher taxon of plant whose continued existence as a viable component of the States flora is determined to be in jeopardy" (GS 19B 106: 202.12). (Endangered species may not be removed from the wild except when a permit is obtained for research, propagation, or rescue which will enhance the survival of the species).
T	**Threatened**	"Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (GS 19B 106: 202.12). (Regulations are the same as for Endangered Species).
SC	**Special Concern**	"Any species of plant in North Carolina which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]" (GS 19B 106:202.12). (Special Concern species which are not also listed as Endangered or Threatened may be collected from the wild and sold under specific regulations. Propagated material only of Special Concern species which are also listed as Endangered or Threatened may be traded or sold under specific regulations.)
C	**Candidate**	Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are also either rare throughout their ranges (fewer than 100 populations total) or disjunct in North Carolina from a main range in a different part of the country or world. Also included are species which may have 20-50 populations in North Carolina, but fewer than 50 populations worldwide. These are species which have the preponderance of their distribution in North Carolina and whose fate depends largely on their conservation here. Also included are many species known to have once occurred in North Carolina but

* **Plant statuses** are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). Endangered, Threatened, and Special Concern species are protected by state law (Plant Protection and Conservation Act, 1979). Candidate and Significantly Rare designations indicate rarity and the need for population monitoring and conservation action. Note that plants can have a double status, e.g., E-SC, indicates that while the plant is endangered, it is collected or sold under regulation.

		with no known extant occurrences in the state (historical or extirpated species); if these species are relocated in the state, they are likely to be listed as Endangered or Threatened. If present land use trends continue, candidate species are likely to merit listing as Endangered or Threatened.
SR	**Significantly Rare**	Species which are very rare in North Carolina, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.
-L	**Limited**	The range of the species is limited to North Carolina and adjacent states (endemic or near endemic). These are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and declining.
-T	**Throughout**	These species are rare throughout their ranges (fewer than 100 populations total)
-D	**Disjunct**	The species is disjunct to NC from a main range in a different part of the country or world.
-P	**Peripheral**	The species is at the periphery of its range in NC. These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina.
-O	**Other**	The range of the species is sporadic or cannot be described by the other Significantly Rare categories
P_	**Proposed**	A species which has been formally proposed for listing as Endangered, Threatened, or Special Concern, but has not yet completed the legally mandated listing process.

North Carolina Status		Description of Animals[2]
E	**Endangered**	"Any native or once-native species of wild animal whose continued existence as a viable component of the State's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an 'endangered species' pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
T	**Threatened**	"Any native or once-native species of wild animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, or one that is designated as a threatened species pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
SC	**Special Concern**	"Any species of wild animal native or once-native to North Carolina which is determined by the Wildlife Resources Commission to require monitoring but which may be taken under regulations adopted under the provisions of this Article." (Article 25 of Chapter 113 of the General Statutes; 1987).
SR	**Significantly Rare**	Any species which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoring. (This is a N.C. Natural Heritage Program designation.) Significantly Rare species include "peripheral" species, whereby North Carolina lies at the periphery of the species' range (such as Hermit Thrush). The designation also includes marine and estuarine fishes identified as "Vulnerable" by the N.C. State Museum of Biological Sciences (Ross et al., 1988, Endangered, Threatened, and Rare Fauna of North Carolina. Part II. A Reevaluation of the Marine and Estuarine Fishes).
EX	**Extirpated**	A species which is no longer believed to occur in the state.
P_	**Proposed**	Species has been proposed by a Scientific Council as a status (Endangered, Threatened, Special Concern, Watch

[2] Animal statuses are determined by the Wildlife Resources Commission and the Natural Heritage Program. Endangered, Threatened, and Special Concern species of mammals, birds, reptiles, amphibians, freshwater fishes, and freshwater and terrestrial mollusks have legal protection status in North Carolina (Wildlife Resources Commission). The Significantly Rare designation indicates rarity and the need for population monitoring and conservation action.

List, or for De-listing) that is different from the current status, but the status has not yet been adopted by the Wildlife Resources Commission and by the General Assembly as law. In the lists of rare species in this book, these proposed statuses are listed in parentheses below the current status. Only those proposed statuses that are different from the current statuses are listed.

Federal Status		Description[3]
E	**Endangered**	A taxon "which is in danger of extinction throughout all or a significant portion of its range" (Endangered Species Act, Section 3).
T	**Threatened**	A taxon "which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (Endangered Species Act, Section 3).
EXN	**Endangered, nonessential experimental population.**	The Endangered Species Act permits the reintroduction of endangered animals as "nonessential experimental" populations. Such populations, considered nonessential to the survival of the species, are managed with fewer restrictions than populations listed as endangered.
T (S/A)	**Threatened due to Similarity of Appearance.**	The Endangered Species Act authorizes the treatment of a species (subspecies or population segment) as threatened even though it is not otherwise listed as threatened if: (a) The species so closely resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to a threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. The American Alligator has this designation due to similarity of appearance to other rare crocodilians. The Bog Turtle (southern population) has this designation due to similarity of appearance to Bog Turtles in the threatened northern population.
C	**Candidate**	A taxon under consideration for which there is sufficient information to support listing. This category was formerly designated as a Candidate 1 (C1) species.

[3] These statuses are designated by the US Fish and Wildlife Service. Federally listed Endangered and Threatened species are protected under the provisions of the Endangered Species Act of 1973, as amended through the 100th Congress. Unless otherwise noted, definitions are taken from the *Federal Register*, Vol. 56, No. 225, November 21, 1991 (50 CFR Part 17).

FSC	**Federal "Species of Concern"**	Formerly defined as a taxon under consideration for which there is insufficient information to support listing; formerly designated as a Candidate 2 (C2) species.
PE	**Proposed Endangered**	Species has been proposed for listing as endangered.
PD	**Proposed De-listed**	Species has been proposed for de-listing.

State Ranks	**Description**
S1	Critically imperiled in North Carolina because of extreme rarity or otherwise very vulnerable to extirpation in the state.
S2	Imperiled in North Carolina because of rarity or otherwise vulnerable to extirpation in the state.
S3	Rare or uncommon in North Carolina
S4	Apparently secure in North Carolina, with many occurrences.
S5	Demonstrably secure in North Carolina and essentially ineradicable under present conditions.
SA	Accidental or casual; one to several records for North Carolina, but the state is outside the normal range of the species.
SH	Of historical occurrence in North Carolina, perhaps not having been verified in the past 25 years, and suspected to be still extant in the state.
SR	Reported from North Carolina, but without persuasive documentation for either accepting or rejecting the report.
SX	Believed to be extirpated from North Carolina.
SU	Possibly in peril in North Carolina, but status uncertain; more information is needed.
S?	Unranked, or rank uncertain.
S_B	Rank of breeding population in the state. Used for migratory species only.
S_N	Rank of non-breeding population in the state. Used for migratory species only.

SZ_	Population is not of significant conservation concern; applies to transitory, migratory species.